

Alexandra Wactawin

Access DB#

# SEARCH REQUEST FORM

61929

Scientific and Technical Information Center

Requester's Full Name: My-Chan Tran Examiner #: 78933 Date: 3/8/02  
Art Unit: 1641 Phone Number 305-6999 Serial Number: 09/811,538  
Mail Box and Bldg/Room Location: CM1, 8A16 Results Format Preferred (circle) PAPER DISK E-MAIL  
7E12

If more than one search is submitted, please prioritize searches in order of need. MSJ

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Method for detecting an analyte by fluorescence  
Inventors (please provide full names): Mary A. Reppy, Sara A. Sporn,  
and Charles F. Saller  
Earliest Priority Filing Date: 3/20/2000

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Alexandra, can you please perform  
the following searches:

- ① Inventors Search
- ② Attached claims

RECEIVED  
MAR 8 2002  
STIC

Thank you

## STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: _____	NA Sequence (#) _____	STN _____
Searcher Phone #: <u>Point of Contact</u> <u>Alexandra Wactawin</u>	AA Sequence (#) _____	Dialog _____
Searcher Location: <u>Technical Info Specialist</u> <u>CM1 8A02 Tel 308-4992</u>	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: <u>3-14-02</u>	Bibliographic _____	Dr. Link _____
Date Completed: <u>3-14-02</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>812(10)</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: <u>49</u>	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____

④  
per 25-  
33

# Inventor Search

Tran 09/811,538

=> fil medline biosis hcaplus wpids  
FILE 'MEDLINE' ENTERED AT 13:43:37 ON 11 MAR 2002

FILE 'BIOSIS' ENTERED AT 13:43:37 ON 11 MAR 2002  
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FILE 'HCAPLUS' ENTERED AT 13:43:37 ON 11 MAR 2002  
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FILE 'WPIDS' ENTERED AT 13:43:37 ON 11 MAR 2002  
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=> d que 14;d his 15-

L1 15 SEA ("REPPY M A"/AU OR "REPPY MARY A"/AU OR "REPPY MARY  
ALICE"/AU)  
L2 26 SEA ("SPORN S"/AU OR "SPORN S A"/AU OR "SPORN SARAH"/AU OR  
"SPORN SARAH A"/AU OR "SPORN SARAH ANN"/AU)  
L3 133 SEA ("SALLER C"/AU OR "SALLER C F"/AU OR "SALLER CHARLES"/AU  
OR "SALLER CHARLES F"/AU OR "SALLER CHARLES FREDERICK"/AU)  
L4 170 SEA (L1 OR L2 OR L3)

(FILE 'MEDLINE, BIOSIS, HCAPLUS, WPIDS' ENTERED AT 13:40:24 ON 11 MAR  
2002)

L5 3043 S POLYDIACETYLENE? OR POLY DIACETYLENE?  
L6 445 S DI ACETYLENE OR POLYDI ACETYLENE  
L7 3379 S L5 OR L6  
L8 2 S L4 AND L7  
L9 17 S L4 AND (ASSAY? OR IMMUNOASSAY?)  
L10 1 S L9 AND FLUORES?  
L11 192436 S ARRAY?  
L12 1 S L4 AND L11  
L13 2 S L8 OR L10 OR L12  
L14 1 DUP REM L13 (1 DUPLICATE REMOVED)

FILE 'MEDLINE, BIOSIS, HCAPLUS, WPIDS' ENTERED AT 13:43:37 ON 11 MAR 2002

=> d all 114

L14 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2002 ACS DUPLICATE 1  
AN 2001:713655 HCAPLUS  
DN 135:269637  
TI Method for detecting an analyte by fluorescence  
IN Reppy, Mary A.; Sporn, Sarah A.; Saller, Charles  
F.  
PA Analytical Biological Services, Inc., USA  
SO PCT Int. Appl., 54 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
IC ICM G01N021-00  
ICS G01N021-01; G01N021-17; G01N031-20; G01N033-544; G01N033-538;  
G01N033-567; G01N033-537; G01N033-543; G01N033-53; G01N033-546;  
G01N033-552; C12M001-00; C12N001-00; C12N001-20; C12N011-00;  
C12Q001-68; C07H021-04  
CC 9-5 (Biochemical Methods)

Section cross-reference(s): 73

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001071317	A1	20010927	WO 2001-US8790	20010320
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
PRAI	US 2000-190091	P	20000320		
AB	Methods for detecting an analyte are described which entail contacting two-dimensional or three-dimensional arrays of a polydiacetylene backbone having incorporated in the array a substrate which has a direct affinity for, can bind with, or can react with the analyte and detecting changes in the fluorescence of the array to indicate the presence of the analyte.				
ST	<b>fluorescence assay polydiacetylene bound</b>				
	substrate				
IT	Toxins				
	RL: ANT (Analyte); ANST (Analytical study) (cholera; <b>fluorescence assays</b> using substrates incorporated in <b>polydiacetylene</b> backbones)				
IT	Antibodies				
	RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses) (conjugates; <b>fluorescence assays</b> using substrates incorporated in <b>polydiacetylene</b> backbones)				
IT	Liposomes				
	(fluorescence assays using substrates incorporated in <b>polydiacetylene</b> backbones)				
IT	Enzymes, analysis				
	RL: ANT (Analyte); ANST (Analytical study) (fluorescence assays using substrates incorporated in <b>polydiacetylene</b> backbones)				
IT	<b>Immunoassay</b>				
	(fluorescence; fluorescence assays using substrates incorporated in <b>polydiacetylene</b> backbones)				
IT	<b>Immunoassay</b>				
	(immunofluorometric; fluorescence assays using substrates incorporated in <b>polydiacetylene</b> backbones)				
IT	121207-31-6, BODIPY 493/503				
	RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses) (BODIPY 493/503; fluorescence assays using substrates incorporated in <b>polydiacetylene</b> backbones)				
IT	209340-49-8				
	RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses) (BODIPY 630/650; fluorescence assays using substrates incorporated in <b>polydiacetylene</b> backbones)				
IT	217190-24-4, BODIPY TR cadaverine				
	RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES				

(Uses)

(BODIPY TR cadaverine; **fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT 203250-31-1, Dapoxyl AES

RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)

(Dapoxyl (2-aminoethyl)sulfonamide; **fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT 15492-51-0 15522-71-1, Tris(2,2,6,6,-tetramethyl-3,5-heptanedionato)europium 26093-31-2, 7-Amino-4-methylcoumarin 37758-47-7, Ganglioside GM1 64821-29-0, 16-(9-Anthroyloxy)palmitic acid 67000-89-9, 1-Pyrenebutanol 155773-68-5D, conjugates with antibodies 362596-00-7

RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)

(**fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

IT 18194-24-6D, Dimyristoyl phosphatidylcholine, reaction products with tricosadiynoic acid 66990-30-5D, 10,12-Tricosadiynoic acid, reaction products with dimyristoyl phosphatidylcholine 66990-32-7D, 10,12-Pentacosadiynoic acid, UV-crosslinked 178560-65-1, 5,7-Docosadiynoic acid

RL: ARU (Analytical role, unclassified); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)

(**fluorescence assays** using substrates incorporated in **polydiacetylene** backbones)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

- (1) Biocircuits Corporation; WO 9502183 A1 1995 HCAPLUS
- (2) Charych; US 6022748 A 2000 HCAPLUS
- (3) Charych; US 6080423 A 2000 HCAPLUS
- (4) Charych; US 6103217 A 2000 HCAPLUS
- (5) Charych; US 6180135 B1 2001 HCAPLUS
- (6) Regents Of The University Of California; WO 9910743 A1 1999 HCAPLUS
- (7) Saul; US 5415999 A 1995 HCAPLUS
- (8) The Regents Of The University Of California; WO 9836263 A1 1998 HCAPLUS
- (9) The Regents Of The University Of California; WO 9839632 A1 1998 HCAPLUS
- (10) The Regents Of The University Of California; WO 9967423 A1 1999 HCAPLUS

		Equipment/CT
E9	0	BT3 Investigative Techniques/CT
E10	5436	BT2 Genetic Techniques/CT
E11	5673	BT1 Sequence Analysis/CT
E12	2097	--> Oligonucleotide Array Sequence Analysis/CT
E13	2097	MN E5.393.661.640./CT
E14	2097	MN E5.393.760.640./CT
		DC an INDEX MEDICUS major descriptor
		NOTE Hybridization of a nucleic acid sample to a very large set of oligonucleotide probes, which are attached to a solid support, to determine sequence or to detect variations in a gene sequence or expression or for gene mapping.
		INDX coord with GENE EXPRESSION PROFILING if pertinent
		AQ CL EC HI IS MT SN ST TD UT VE
		PNTE Nucleic Acid Hybridization (1993-1998)
		HNTE 99
		MHTH NLM (1999)
E15	0	UF Array, Oligonucleotide/CT
E16	0	UF Array, cDNA/CT
E17	0	UF Arrays, Oligonucleotide/CT
E18	0	UF Arrays, cDNA/CT
E19	0	UF Chip, DNA/CT
E20	0	UF Chip, Gene/CT
E21	0	UF Chip, Gene Expression/CT
E22	0	UF Chips, DNA/CT
E23	0	UF Chips, Gene/CT
E24	0	UF Chips, Gene Expression/CT
E25	0	UF DNA Chip/CT
E26	0	UF DNA Chips/CT
E27	0	UF DNA Microarray/CT
E28	0	UF DNA Microarrays/CT
E29	0	UF DNA Microchip/CT
E30	0	UF DNA Microchips/CT
E31	0	UF Expression Chip, Gene/CT
E32	0	UF Expression Chips, Gene/CT
E33	0	UF Gene Chip/CT
E34	0	UF Gene Chips/CT
E35	0	UF Gene Expression Chip/CT
E36	0	UF Gene Expression Chips/CT
E37	0	UF Gene Expression Microarray Analysis/CT
E38	0	UF Microarray Analysis of Gene Expression/CT
E39	0	UF Microarray, DNA/CT
E40	0	UF Microarray, Oligonucleotide/CT
E41	0	UF Microarray, cDNA/CT
E42	0	UF Microarrays, DNA/CT
E43	0	UF Microarrays, Oligonucleotide/CT
E44	0	UF Microarrays, cDNA/CT
E45	0	UF Microchip, DNA/CT
E46	0	UF Microchips, DNA/CT
E47	0	UF OLIGONUCLEOTIDE ARRAY SEQ ANAL/CT
E48	0	UF Oligodeoxyribonucleotide Array Sequence Analysis/CT
E49	0	UF Oligonucleotide Array/CT
E50	0	UF Oligonucleotide Arrays/CT
E51	0	UF Oligonucleotide Microarray/CT
E52	0	UF Oligonucleotide Microarrays/CT
E53	0	UF Sequence Analysis, Oligonucleotide Array/CT
E54	0	UF Sequencing By Hybridization/CT
E55	0	UF Sequencing By Hybridizations/CT

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E56	0	UF	cDNA Array/CT
E57	0	UF	cDNA Arrays/CT
E58	0	UF	cDNA Microarray/CT
E59	0	UF	cDNA Microarrays/CT
E60	765	RT	Combinatorial Chemistry Techniques/CT
E61	2504	RT	Gene Expression Profiling/CT
E62	9957	RT	Oligonucleotide Probes/CT

\*\*\*\*\* END\*\*\*

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(FILE 'MEDLINE' ENTERED AT 08:29:42 ON 14 MAR 2002)  
DEL HIS Y

FILE 'HCAPLUS' ENTERED AT 08:32:58 ON 14 MAR 2002

FILE 'REGISTRY' ENTERED AT 08:32:59 ON 14 MAR 2002  
E POLYDIACETYLENE/CN

L1 1 S E3  
E DIACETYLENE/CN  
L2 1 S E3  
E E10

FILE 'HCAPLUS' ENTERED AT 08:33:50 ON 14 MAR 2002

L3 3166 S L1 OR L2 OR POLYDIACEYLENE OR DIACETYLENE  
L4 4645 S L3 OR POLYDIACETYLENE  
L5 17 S L4 (L) BACKBONE  
L6 23 S L4 (L) BACKBONE#  
L7 116088 S ASSAY? OR IMMUNOASSAY?  
L8 177783 S FLUORES? OR IMMUNOFLUORES?  
L9 1 S L6 AND (L7 OR L8)  
L10 2925 S (POLYDIACETYLENE OR DIACETYLENE)/AB  
L11 5411 S L10 OR L4  
L12 24062 S ARRAY?  
L13 52 S L4 (L) (ARRAY# OR SUBSTRATE# OR SUPPORT#)  
L14 3 S L13 AND (L7 OR L8)  
L15 12 S L4 AND L7  
L16 2 S L15 AND L8  
L17 2772 S POLYDIACETYLENE#  
L18 4964 S L17 OR L4  
L19 132 S L18 AND (L7 OR L8)  
L20 4 S L19 (L) (ARRAY# OR SUBSTRATE# OR SUPPORT#)  
L21 54 S L9 OR L13 OR L16 OR L20  
L22 5 S L9 OR L14 OR L16 OR L20  
L23 10 S L15 NOT L22  
L24 3369 S ANALYTE? (L) (ANALYSIS OR ANST/RL OR ANT/RL OR DETECT? OR ID  
L25 7 S L24 AND (L10 OR L18)  
L26 11 S L22 OR L25  
L27 7 S L15 NOT L26

FILE 'REGISTRY' ENTERED AT 08:43:03 ON 14 MAR 2002

FILE 'REGISTRY' ENTERED AT 08:43:07 ON 14 MAR 2002

FILE 'HCAPLUS' ENTERED AT 08:43:19 ON 14 MAR 2002

L28 636473 S ANTIBOD? OR ENZYM? OR TOXIN#  
L29 80350 S L28 (L) (ANALYSIS OR ANST/RL OR ANT/RL OR DETECT?)  
L30 24 S L29 AND (L10 OR L18)  
L31 3 S L30 AND L8  
L32 1 S L31 NOT (L27 OR L26)

=> d que 131;d his 132

L1 1 SEA FILE=REGISTRY ABB=ON POLYDIACETYLENE/CN  
L2 1 SEA FILE=REGISTRY ABB=ON DIACETYLENE/CN  
L3 3166 SEA FILE=HCAPLUS ABB=ON L1 OR L2 OR POLYDIACEYLENE/OBI OR  
DIACETYLENE/OBI  
L4 4645 SEA FILE=HCAPLUS ABB=ON L3 OR POLYDIACETYLENE/OBI  
L8 177783 SEA FILE=HCAPLUS ABB=ON FLUORES?/OBI OR IMMUNOFLUORES?/OBI

L10 2925 SEA FILE=HCAPLUS ABB=ON (POLYDIACETYLENE OR DIACETYLENE)/AB  
 L17 2772 SEA FILE=HCAPLUS ABB=ON POLYDIACETYLENE#/OBI  
 L18 4964 SEA FILE=HCAPLUS ABB=ON L17 OR L4  
 L28 636473 SEA FILE=HCAPLUS ABB=ON ANTIBOD?/OBI OR ENZYM?/OBI OR  
 TOXIN#/OBI  
 L29 80350 SEA FILE=HCAPLUS ABB=ON L28 (L) (ANALYSIS/OBI OR ANST/RL OR  
 ANT/RL OR DETECT?/OBI)  
 L30 24 SEA FILE=HCAPLUS ABB=ON L29 AND (L10 OR L18)  
 L31 3 SEA FILE=HCAPLUS ABB=ON L30 AND L8

(FILE 'HCAPLUS' ENTERED AT 08:43:19 ON 14 MAR 2002)

~~132~~ 1 ~~SEARCHED~~ NOT (L27 OR L26)

=> d all

L32 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2002 ACS  
 AN 2000:790686 HCAPLUS  
 DN 133:331759  
 TI Method for detecting biological agents  
 IN Chen, Liaohai; Mcbranch, Duncan W.; Wang, Hsing-Lin; Whitten, David G.  
 PA The Regents of the University of California, USA  
 SO PCT Int. Appl., 38 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM C12Q001-68  
 ICS C12Q001-70; G01N021-64; G01N033-00; G01N033-53; G01N033-531;  
 G01N033-533; G01N033-543; C07H021-02; C07H021-04; C12N015-00;  
 B05D001-18; B01J013-00  
 CC 9-1 (Biochemical Methods)  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000066790	A1	20001109	WO 2000-US12423	20000504
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1097242	A1	20010509	EP 2000-928892	20000504
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI US 1999-132556	P	19990505		
WO 2000-US12423	W	20000504		
AB A sensor is provided including a polymer capable of having an alterable measurable property from the group of luminescence and elec. cond., the polymer having an intermediate combination of a recognition element, a tethering element and a property-altering element bound thereto and capable of altering the measurable property, the intermediate combination adapted for subsequent sepn. from the polymer upon exposure to an agent having an affinity for binding to the recognition element whereupon the sepn. of the intermediate combination from the polymer results in a detectable change in the alterable measurable property, and, a means of				



detecting said detectable change in the alterable measurable property.

ST detecting biol agent

IT Atoms  
     (Divalent; method for detecting biol. agents)

IT Gels  
     (Micro porous; method for detecting biol. agents)

IT Polyanilines  
     RL: DEV (Device component use); USES (Uses)  
     (and derivs.; method for detecting biol. agents)

IT Ligands  
     RL: DEV (Device component use); USES (Uses)  
     (chem.; method for detecting biol. agents)

IT Polymers, uses  
     RL: DEV (Device component use); USES (Uses)  
     (conjugated; method for detecting biol. agents)

IT Immunoglobulins  
     RL: DEV (Device component use); USES (Uses)  
     (fragments; method for detecting biol. agents)

IT Affinity  
     Bacteria (Eubacteria)  
     Biosensors  
     Cell  
     Dissolution  
     Electric conductivity  
     Energy transfer  
     **Fluorescence**  
     **Fluorescent** dyes  
     Fluorometry  
     Luminescence  
     Luminescence spectroscopy  
     Microorganism  
     Optical fibers  
     Polyelectrolytes  
     Sensors  
     Separation  
     Solutions  
     Test kits  
     Virus  
     (method for detecting biol. agents)

IT **Antibodies**  
     Antigens  
     Coordination compounds  
     **Enzymes**, uses  
     Glycolipids  
     Nucleic acids  
     Oligonucleotides  
     Peptide nucleic acids  
     Plastics, uses  
     Poly(arylenealkenylenes)  
     Polyacetylenes, uses  
     **Polydiacetylenes**  
     Polymers, uses  
     Polysaccharides, uses  
     Proteins, general, uses  
     **Toxins**  
     RL: DEV (Device component use); USES (Uses)  
     (method for **detecting** biol. agents)

IT **Fluorescent** substances  
     (polymers; method for detecting biol. agents)

IT Peptides, uses

RL: DEV (Device component use); USES (Uses)  
(polypeptides; method for detecting biol. agents)

IT 229010-56-4, Single bond

RL: ANT (Analyte); ANST (Analytical study)  
(method for detecting biol. agents)

IT 58-85-5, Biotin 71-00-1D, Histidine, copper complex 1910-42-5, Methyl  
viologen 7440-50-8D, Copper, histidine complex 9033-83-4,  
Polyphenylene 9055-67-8D, Poly(ADP-ribose) polymerase, DNA-binding  
domain 25067-54-3, Polyfuran 25067-54-3D, Polyfuran, derivs.  
25067-58-7, Polyacetylene 25067-59-8, Polyvinyl carbazole 25067-59-8D,  
Polyvinyl carbazole, derivs. 25233-30-1, Polyaniline 25233-30-1D,  
Polyaniline, derivs. 25233-34-5, Polythiophene 26009-24-5,  
Poly(p-phenylene vinylene) 30604-81-0, Polypyrrole 30604-81-0D,  
Polypyrrole, derivs. 37758-47-7, Ganglioside GM1 78675-98-6, Squaraine  
96638-49-2, Poly(phenylene vinylene) 96638-49-2D, Poly(phenylene  
vinylene), derivs. 125714-86-5 143186-57-6 164658-06-4,  
Poly(2,5-pyridinediyl-1,2-ethenediyl) 189145-97-9, Poly(pyridinediyl-1,2-  
ethenediyl)

RL: DEV (Device component use); USES (Uses)  
(method for detecting biol. agents)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Chen, L; Proceedings of the National Academy of Science 1999, V96(22),  
P12287 HCAPLUS
- (2) Cubicciotti; US 5656739 A 1997 HCAPLUS
- (3) Cubicciotti; US 5739305 A 1998 HCAPLUS
- (4) Dattagupta; US 4724202 A 1998 HCAPLUS
- (5) Hawa; WO 9913993 A1 1999 HCAPLUS
- (6) Molecular Machines Inc; WO 9960169 A1 1999 HCAPLUS
- (7) Rathbone, D; Tetrahedron Letters 2000, V41, P123 HCAPLUS
- (8) Research Corporation Technologies Inc; WO 9641173 A1 1996 HCAPLUS
- (9) Suarez-Rodriguez, J; Analytica Chimica Acta 2000, V405, P67 HCAPLUS

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(FILE 'MEDLINE' ENTERED AT 08:29:42 ON 14 MAR 2002)  
DEL HIS Y

FILE 'HCAPLUS' ENTERED AT 08:32:58 ON 14 MAR 2002

FILE 'REGISTRY' ENTERED AT 08:32:59 ON 14 MAR 2002

E POLYDIACETYLENE/CN

L1 1 S E3

E DIACETYLENE/CN

L2 1 S E3

E E10

FILE 'HCAPLUS' ENTERED AT 08:33:50 ON 14 MAR 2002

L3 3166 S L1 OR L2 OR POLYDIACETYLENE OR DIACETYLENE

L4 4645 S L3 OR POLYDIACETYLENE

L5 17 S ~~L4~~ (L) BACKBONE

L6 23 S L4 (L) BACKBONE#

L7 116088 S ASSAY? OR IMMUNOASSAY?

L8 177783 S FLUORES? OR IMMUNOFLUORES?

L9 1 S L6 AND (L7 OR L8)

L10 2925 S (POLYDIACETYLENE OR DIACETYLENE)/AB

L11 5411 S L10 OR L4

L12 24062 S ARRAY?

L13 52 S L4 (L) (ARRAY# OR SUBSTRATE# OR SUPPORT#)

L14 3 S L13 AND (L7 OR L8)

L15 12 S L4 AND L7

L16 2 S L15 AND L8

L17 2772 S POLYDIACETYLENE#

L18 4964 S L17 OR L4

L19 132 S L18 AND (L7 OR L8)

L20 4 S L19 (L) (ARRAY# OR SUBSTRATE# OR SUPPORT#)

L21 54 S L9 OR L13 OR L16 OR L20

L22 5 S L9 OR L14 OR L16 OR L20

L23 10 S L15 NOT L22

L24 3369 S ANALYTE? (L) (ANALYSIS OR ANST/RL OR ANT/RL OR DETECT? OR ID

L25 7 S L24 AND (L10 OR L18)

L26 11 S L22 OR L25

L27 7 S L15 NOT L26

FILE 'REGISTRY' ENTERED AT 08:43:03 ON 14 MAR 2002

FILE 'REGISTRY' ENTERED AT 08:43:07 ON 14 MAR 2002

FILE 'HCAPLUS' ENTERED AT 08:43:19 ON 14 MAR 2002

L28 636473 S ANTIBOD? OR ENZYM? OR TOXIN#

L29 80350 S L28 (L) (ANALYSIS OR ANST/RL OR ANT/RL OR DETECT?)

L30 24 S L29 AND (L10 OR L18)

L31 3 S L30 AND L8

L32 1 S L31 NOT (L27 OR L26)

=> fil reg

FILE 'REGISTRY' ENTERED AT 08:43:07 ON 14 MAR 2002  
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STRUCTURE FILE UPDATES: 12 MAR 2002 HIGHEST RN 400707-37-1  
DICTIONARY FILE UPDATES: 12 MAR 2002 HIGHEST RN 400707-37-1

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES  
for more information. See STN Note 27, Searching Properties in the CAS  
Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

The P indicator for Preparations was not generated for all of the  
CAS Registry Numbers that were added to the H/Z/CA/CAPLUS files between  
12/27/01 and 1/23/02. Use of the P indicator in online and SDI searches  
during this period, either directly appended to a CAS Registry Number  
or by qualifying an L-number with /P, may have yielded incomplete results.  
As of 1/23/02, the situation has been resolved. Also, note that searches  
conducted using the PREP role indicator were not affected.

Customers running searches and/or SDIs in the H/Z/CA/CAPLUS files  
incorporating CAS Registry Numbers with the P indicator between 12/27/01  
and 1/23/02, are encouraged to re-run these strategies. Contact the  
CAS Help Desk at 1-800-848-6533 in North America or 1-614-447-3698,  
worldwide, or send an e-mail to [help@cas.org](mailto:help@cas.org) for further assistance or to  
receive a credit for any duplicate searches.

=> d que 11;d 11

L1 1 SEA FILE=REGISTRY ABB=ON POLYDIACETYLENE/CN

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS  
RN 27987-87-7 REGISTRY  
CN 1,3-Butadiyne, homopolymer (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Butadiyne, polymers (8CI)  
OTHER NAMES:  
CN Butadiyne homopolymer  
CN Diacetylene polymer  
CN Poly(1,3-butadiyne)  
CN Polybutadiyne  
CN **Polydiacetylene**  
CN PTS  
MF (C4 H2)x  
CI PMS, COM  
PCT Polyacetylene, Polyphenyl, Polyphenyl formed  
LC STN Files: AGRICOLA, BIOSIS, CA, CAPLUS, CEN, CIN, MEDLINE, PIRA, PROMT,  
TOXCENTER, USPATFULL, VTB

CM 1

CRN 460-12-8

CMF C4 H2

HC≡C-C≡CH

339 REFERENCES IN FILE CA (1967 TO DATE)  
33 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
340 REFERENCES IN FILE CAPLUS (1967 TO DATE)

=> d que 12;d 12

L2 1 SEA FILE=REGISTRY ABB=ON DIACETYLENE/CN

L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS

RN 460-12-8 REGISTRY

CN 1,3-Butadiyne (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Butadiyne (8CI)

OTHER NAMES:

CN Biacetylene

CN Biethynyl

CN **Diacetylene**

FS 3D CONCORD

MF C4 H2

CI COM

LC STN Files: AGRICOLA, BEILSTEIN\*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMINFORMRX, CHEMLIST, CIN, CSNB, DETHERM\*, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN\*, HODOC\*, IFICDB, IFIPAT, IFIUIDB, NIOSHTIC, PIRA, PROMT, SPECINFO, TOXCENTER, USPATFULL, VTB  
(\*File contains numerically searchable property data)

Other Sources: EINECS\*\*, NDSL\*\*, TSCA\*\*

(\*\*Enter CHEMLIST File for up-to-date regulatory information)

HC≡C-C≡CH

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1001 REFERENCES IN FILE CA (1967 TO DATE)  
116 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
1004 REFERENCES IN FILE CAPLUS (1967 TO DATE)  
34 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 08:43:19 ON 14 MAR 2002

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FILE COVERS 1907 - 14 Mar 2002 VOL 136 ISS 11  
FILE LAST UPDATED: 12 Mar 2002 (20020312/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

The P indicator for Preparations was not generated for all of the CAS Registry Numbers that were added to the CAS files between 12/27/01 and 1/23/02. As of 1/23/02, the situation has been resolved. Searches and/or SDIs in the H/Z/CA/CAplus files incorporating CAS Registry Numbers with the P indicator executed between 12/27/01 and 1/23/02 may be incomplete. See the NEWS message on this topic for more information. 'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> d his l3-

(FILE 'REGISTRY' ENTERED AT 08:32:59 ON 14 MAR 2002)  
E E10

FILE 'HCAPLUS' ENTERED AT 08:33:50 ON 14 MAR 2002

```

L3      3166 S L1 OR L2 OR POLYDIACETYLENE OR DIACETYLENE
L4      4645 S L3 OR POLYDIACETYLENE
L5      17 S L4 (L) BACKBONE
L6      23 S L4 (L) BACKBONE#
L7      116088 S ASSAY? OR IMMUNOASSAY?
L8      177783 S FLUORES? OR IMMUNOFLUORES?
L9      1 S L6 AND (L7 OR L8)
L10     2925 S (POLYDIACETYLENE OR DIACETYLENE)/AB
L11     5411 S L10 OR L4
L12     24062 S ARRAY?
L13     52 S L4 (L) (ARRAY# OR SUBSTRATE# OR SUPPORT#)
L14     3 S L13 AND (L7 OR L8)
L15     12 S L4 AND L7
L16     2 S L15 AND L8
L17     2772 S POLYDIACETYLENE#
L18     4964 S L17 OR L4
L19     132 S L18 AND (L7 OR L8)
L20     4 S L19 (L) (ARRAY# OR SUBSTRATE# OR SUPPORT#)
L21     54 S L9 OR L13 OR L16 OR L20
L22     5 S L9 OR L14 OR L16 OR L20
L23     10 S L15 NOT L22
L24     3369 S ANALYTE? (L) (ANALYSIS OR ANST/RL OR ANT/RL OR DETECT? OR ID
L25     7 S L24 AND (L10 OR L18)
L26     11 S L22 OR L25

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L27 7 S 15 NOT L26

FILE 'REGISTRY' ENTERED AT 08:43:03 ON 14 MAR 2002

FILE 'REGISTRY' ENTERED AT 08:43:07 ON 14 MAR 2002

FILE 'HCAPLUS' ENTERED AT 08:43:19 ON 14 MAR 2002

=&gt; d .ca 126 1-11;d .ca 127 1-7

L26 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:772087 HCAPLUS

DOCUMENT NUMBER: 135:341173

TITLE: Nucleic acid-coupled colorimetric **analyte**  
**detectors** using self-assembling  
**polydiacetylene** liposomes

INVENTOR(S): Charych, Deborah H.; Jonas, Ulrich

PATENT ASSIGNEE(S): Regents of the University of California, USA

SOURCE: U.S., 96 pp., Cont.-in-part of U.S. Ser. No. 461,509.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 11

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6306598	B1	20011023	US 1999-337973	19990621
US 6001556	A	19991214	US 1996-592724	19960126
US 6183772	B1	20010206	US 1996-609312	19960301
US 6022748	A	20000208	US 1997-920501	19970829
US 6080423	A	20000627	US 1997-944257	19971006
US 6180135	B1	20010130	US 1997-944323	19971006
US 2001026915	A1	20011004	US 2000-734410	20001211

PRIORITY APPLN. INFO.:

US 1992-976697	A2	19921113
US 1993-159927	A2	19931130
US 1994-289384	B2	19940811
US 1994-289384	B2	19940811
US 1994-328237	B2	19941024
US 1995-389475	B3	19950213
US 1995-389475	B2	19950213
US 1996-592724	A3	19960126
US 1996-609312	A2	19960301
US 1997-38383	P	19970214
US 1997-39749	P	19970303
US 1997-50496	P	19970623
US 1997-920501	A3	19970829
US 1997-944323	A2	19971006
US 1998-23898	A2	19980213
US 1998-33557	A2	19980302
US 1998-90266	P	19980622
US 1998-103344	A2	19980623
US 1999-461509	A2	19991214
US 2000-500295	A2	20000208
US 1992-982189	B2	19921125
US 1997-944257	A3	19971006
US 1999-337973	A2	19990621
US 1999-170190	P	19991210

AB The present invention relates to methods and compns. for the direct detection of analytes and membrane conformational changes through the

detection of color changes in biopolymeric materials. In particular, the present invention provides for the direct colorimetric detection of analytes using nucleic acid ligands at surfaces of **polydiacetylene** liposomes and related mol. layer systems. Liposomes were prep'd. from a lipid mixt. of 95% 5,7-docsoadiynoic acid and 5% 5,7-docosadiynoate succinimide. The liposome soln. was photopolymd. with UV light (254 nm) and then reacted with RGGGAATTCGTR ( $R = OP(OH)(O)OCH_2(CH_2OH)CH(CH_2)4NH_2$ ) to make a probe.

IC C12Q001-68; C07H019-00; G01N033-543; G01N021-00  
 NCL 435006000  
 CC 9-5 (Biochemical Methods)  
 Section cross-reference(s): 3  
 ST nucleic acid coupled colorimetry **polydiacetylene** liposome  
 IT Neisseria gonorrhoeae  
 Vibrio vulnificus  
 (antibodies as ligands in **detection** of; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)  
 IT Amino group  
 Hydroxyl group  
 (as head groups in self-assembling monomer; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)  
 IT Amino acids, uses  
 Carboxylic acids, uses  
 RL: ARG (Analytical reagent use); PRP (Properties); **ANST (Analytical study)**; USES (Uses)  
 (as head groups in self-assembling monomer; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)  
 IT Carbohydrates, uses  
 RL: ARG (Analytical reagent use); **ANST (Analytical study)**; USES (Uses)  
 (as ligand in biopolymeric **detector**; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)  
 IT Filters  
 (biopolymer immobilized on support of; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)  
 IT Fluoropolymers, uses  
 Glass, uses  
 Mica-group minerals, uses  
 RL: ARG (Analytical reagent use); DEV (Device component use); **ANST (Analytical study)**; USES (Uses)  
 (biopolymer immobilized on support of; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)  
 IT Films  
 (biopolymeric; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)  
 IT Toxins  
 RL: **ANT (Analyte)**; **ANST (Analytical study)**  
 (cholera; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)  
 IT Molecular recognition  
 (complexes; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene**



- liposomes)
- IT Blood products
  - (components, **detection of; nucleic acid-coupled colorimetric analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT Sialic acids
  - RL: ARU (Analytical role, unclassified); **ANST (Analytical study)** (conjugates, **diacetylene** derivs.; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT Lipids, biological studies
  - Nucleic acids
    - RL: ARG (Analytical reagent use); BPR (Biological process); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
      - (conjugates; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT Bacteria (Eubacteria)
  - Drugs
  - Fungi
  - Human immunodeficiency virus 1
  - Influenza virus
  - Ions
  - Parasite
  - Pathogen
  - Virus
    - (**detection of; nucleic acid-coupled colorimetric analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT Amino acids, **analysis**
  - RL: ARU (Analytical role, unclassified); **ANST (Analytical study)** (**diacetylene** derivs.; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT DNA
  - RL: **ANT (Analyte)**; **ANST (Analytical study)** (double-stranded; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT Toxins
  - RL: **ANT (Analyte)**; **ANST (Analytical study)** (enterotoxins, Escherichia; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT Disease, animal
  - (genetic; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT Functional groups
  - Molecules
    - (hydrophobic; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT Antibodies
  - RL: ARG (Analytical reagent use); DEV (Device component use); SPN (Synthetic preparation); **ANST (Analytical study)**; PREP (Preparation); USES (Uses)
    - (immobilized; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene**

- liposomes)
- IT Erythrocyte
  - (in malarial Plasmodium **detection** with sialic acid-contg. PDA films; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT Genetic element
  - RL: **ANT (Analyte); ANST (Analytical study)**
  - (intron, RNA; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT Organelle
  - (lamella; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT Aldehydes, properties
  - Amines, properties
  - Thiols (organic), properties
  - RL: PRP (Properties)
  - (nucleic acid ligands linked to polymd. self-assembling lipids through; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT Air **analysis**
  - Bacillus subtilis
  - Biosensors
  - Blood **analysis**
  - Chelating agents
  - Chromophores
  - Coils
  - Colorimetry
  - Conformation
  - Dopants
  - Electron acceptors
  - Electron donors
  - Escherichia coli
  - Functional groups
  - Helix (conformation)
  - Liposomes
  - Membranes, nonbiological
  - Nucleic acid hybridization
  - Pharmaceutical **analysis**
  - Plasmodium (malarial genus)
  - Self-assembled monolayers
  - Surfactants
  - Temperature
  - Urine **analysis**
  - Vibrio cholerae
  - pH
    - (nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)
- IT Agglutinins and Lectins
  - Antibodies
  - DNA
  - Double stranded RNA
  - Enzymes, **analysis**
  - Hormones, animal, **analysis**
  - Nucleic acids
  - Receptors
  - Transcription factors
  - Volatile organic compounds

mRNA  
rRNA  
tRNA  
RL: **ANT (Analyte); ANST (Analytical study)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT Antigens  
Proteins, general, **analysis**  
RL: **ANT (Analyte); ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT Fibers  
Sialic acids  
Trisaccharides  
RL: **ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT Biopolymers  
Ligands  
RL: **ARG (Analytical reagent use); BPR (Biological process); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT Probes (nucleic acid)  
RL: **ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT Cardiolipins  
Ceramides  
Cerebrosides  
Lysophosphatidylcholines  
Phosphatidic acids  
Phosphatidylcholines, **analysis**  
Phosphatidylethanolamines, **analysis**  
Phosphatidylglycerols  
Phosphatidylinositols  
Phosphatidylserines  
Polyoxyalkylenes, **analysis**  
Sphingomyelins  
Steroids, **analysis**  
RL: **ARU (Analytical role, unclassified); ANST (Analytical study)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT Immobilization, biochemical  
(of biopolymer on support; nucleic acid-coupled colorimetric  
**analyte detectors** using self-assembling  
**polydiacetylene** liposomes)

IT Dot blot hybridization  
(reverse; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene**  
liposomes)

IT Lipids, biological studies  
RL: **ARG (Analytical reagent use); BPR (Biological process); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)**  
(self-assembling; nucleic acid-coupled colorimetric **analyte**

**detectors** using self-assembling **polydiacetylene** liposomes)

IT Holders  
(supports, biopolymer immobilized on; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Oligosaccharides, uses  
RL: ARG (Analytical reagent use); **ANST (Analytical study)**; **USES** (Uses)  
(tetrasaccharides; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Organelle  
(tubule; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT Detergents  
(zwitterionic; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 7440-57-5, Gold, uses 7631-86-9, Silica, uses 9002-84-0, Teflon 9002-88-4, Polyethylene 9003-53-6, Polystyrene 9012-36-6, Sepharose 9041-35-4, Sephadex G 25 25014-41-9, Polyacrylonitrile  
RL: ARG (Analytical reagent use); DEV (Device component use); **ANST (Analytical study)**; **USES** (Uses)  
(biopolymer immobilized on support of; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 7440-21-3, Silicon, uses  
RL: ARG (Analytical reagent use); DEV (Device component use); **ANST (Analytical study)**; **USES** (Uses)  
(chips, biopolymer immobilized on; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 9001-51-8, Hexokinase  
RL: RCT (Reactant)  
(immobilization on PDA and NHS-PDA monolayer slides; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 66990-32-7, 10,12-Pentacosadiynoic acid 138305-24-5, 5,7-Pentacosadiynoic acid 178560-65-1, 5,7-Docosadiynoic acid  
RL: ARG (Analytical reagent use); PRP (Properties); RCT (Reactant); **ANST (Analytical study)**; **USES** (Uses)  
(in self-assembling monomer; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 369375-91-7  
RL: ARG (Analytical reagent use); RCT (Reactant); **ANST (Analytical study)**; **USES** (Uses)  
(liposomes contg.; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 50-99-7, D-Glucose, **analysis** 9002-61-3, Chorionic gonadotropin 9026-81-7, Nuclease 9031-56-5, Ligase 37209-28-2, Bungarotoxin 120178-12-3, Telomerase 344315-57-7, Polymerase  
RL: **ANT (Analyte)**; **ANST (Analytical study)**  
(nucleic acid-coupled colorimetric **analyte detectors** using self-assembling **polydiacetylene** liposomes)

IT 9001-84-7, Phospholipase A2  
RL: **ANT (Analyte)**; ARG (Analytical reagent use); BAC (Biological

activity or effector, except adverse); **ANST (Analytical study)**;  
**BIOL (Biological study)**; **USES (Uses)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT 9001-86-9, Phospholipase C 9001-87-0, Phospholipase D  
RL: **ANT (Analyte)**; **BAC (Biological activity or effector, except adverse)**; **ANST (Analytical study)**; **BIOL (Biological study)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT 56-23-5, Carbon tetrachloride, **analysis** 60-29-7, Diethylether, **analysis** 64-17-5, Ethanol, **analysis** 67-63-0, Isopropanol, **analysis** 67-66-3, Chloroform, **analysis** 71-36-3, 1-Butanol, **analysis** 71-43-2, Benzene, **analysis** 107-06-2, Ethylene dichloride, **analysis** 108-88-3, Toluene, **analysis** 110-82-7, Cyclohexane, **analysis** 111-27-3, 1-Hexanol, **analysis** 111-87-5, 1-Octanol, **analysis**  
RL: **ANT (Analyte)**; **PRP (Properties)**; **ANST (Analytical study)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT 71-00-1D, L-Histidine, conjugates with amine-coupled PDA 18656-38-7, Dmpc 37758-47-7, Ganglioside GM1 104443-58-5, Ganglioside GT1b  
RL: **ARG (Analytical reagent use)**; **ANST (Analytical study)**; **USES (Uses)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT 199106-13-3, MJ33  
RL: **ARG (Analytical reagent use)**; **BAC (Biological activity or effector, except adverse)**; **ANST (Analytical study)**; **BIOL (Biological study)**; **USES (Uses)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT 370159-23-2 370159-24-3  
RL: **ARG (Analytical reagent use)**; **PRP (Properties)**; **RCT (Reactant)**; **ANST (Analytical study)**; **USES (Uses)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT 370649-87-9P  
RL: **ARG (Analytical reagent use)**; **PRP (Properties)**; **SPN (Synthetic preparation)**; **ANST (Analytical study)**; **PREP (Preparation)**; **USES (Uses)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT 57-88-5, Cholesterol, **analysis** 63-42-3D, Lactose, **diacetylene** derivs. 83-44-3 123-78-4 151-21-3, Sodium dodecyl sulfate, **analysis** 460-12-8D, **Diacetylene**, derivs. 9036-19-5, Octoxynol 25322-68-3, Polyethylene glycol 29557-51-5, Dodecylphosphocholine 34344-66-6 58846-77-8, Decylglucoside 140708-39-0 369375-82-6  
RL: **ARU (Analytical role, unclassified)**; **ANST (Analytical study)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT 66990-30-5, 10,12-Tricosadiynoic acid  
RL: **ARU (Analytical role, unclassified)**; **RCT (Reactant)**; **ANST (Analytical study)**  
(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

IT 7646-85-7, Zinc chloride, biological studies  
RL: **BAC (Biological activity or effector, except adverse)**; **BIOL**

(Biological study)

(nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)

- IT 10108-64-2, Cadmium chloride (CdCl<sub>2</sub>)  
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
- (nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)
- IT 146064-06-4P 369375-83-7P 369375-93-9P  
RL: BPR (Biological process); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
- (nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)
- IT 125110-42-1D, immobilized and protected 205266-20-2 370159-17-4  
RL: PRP (Properties); RCT (Reactant)
- (nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)
- IT 228723-67-9P 368951-38-6P 368951-39-7P 369375-90-6P 369375-99-5P  
370159-18-5DP, immobilized and protected 370159-19-6P 370159-20-9P  
370159-21-0P 370159-22-1P 370649-88-0DP, immobilized and protected  
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
- (nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)
- IT 125110-43-2P 370649-89-1P 370649-90-4P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
- (nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)
- IT 108-24-7, Acetic anhydride 124-09-4, Hexamethylenediamine, reactions  
141-43-5, Ethanolamine, reactions 302-01-2, Hydrazine, reactions  
681-84-5, Tetramethylorthosilicate 929-75-9, Tetraethylene glycol  
diamine 6066-82-6, N-Hydroxy succinimide 53053-08-0 75495-27-1  
136766-23-9 146064-10-0 369375-96-2  
RL: RCT (Reactant)
- (nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)
- IT 136766-21-7P 137870-33-8P 146064-07-5P 146064-08-6P 146064-09-7P  
369375-84-8P 369375-86-0P 369375-88-2P 369375-94-0P 369375-97-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
- (nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)
- IT 88373-04-0P 146064-05-3P 369375-89-3P 369375-98-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)
- (nucleic acid-coupled colorimetric **analyte detectors**  
using self-assembling **polydiacetylene** liposomes)
- IT 151014-05-0, 4: PN: US6306598 SEQID: 1 unclaimed DNA  
RL: PRP (Properties)
- (unclaimed nucleotide sequence; nucleic acid-coupled colorimetric  
**analyte detectors** using self-assembling  
**polydiacetylene** liposomes)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:713655 HCAPLUS

DOCUMENT NUMBER: 135:269637

TITLE: Method for detecting an analyte by  
**fluorescence**

INVENTOR(S): Reppy, Mary A.; Sporn, Sarah A.; Saller, Charles F.

PATENT ASSIGNEE(S): Analytical Biological Services, Inc., USA

SOURCE: PCT Int. Appl., 54 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001071317	A1	20010927	WO 2001-US8790	20010320
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: US 2000-190091 P 20000320

AB Methods for detecting an analyte are described which entail contacting two-dimensional or three-dimensional arrays of a **polydiacetylene** backbone having incorporated in the array a substrate which has a direct affinity for, can bind with, or can react with the analyte and detecting changes in the fluorescence of the array to indicate the presence of the analyte.

IC ICM G01N021-00  
 ICS G01N021-01; G01N021-17; G01N031-20; G01N033-544; G01N033-538; G01N033-567; G01N033-537; G01N033-543; G01N033-53; G01N033-546; G01N033-552; C12M001-00; C12N001-00; C12N001-20; C12N011-00; C12Q001-68; C07H021-04

CC 9-5 (Biochemical Methods)  
 Section cross-reference(s): 73

ST **fluorescence assay polydiacetylene bound substrate**

IT Toxins  
 RL: ANT (Analyte); ANST (Analytical study)  
 (cholera; **fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT Antibodies  
 RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)  
 (conjugates; **fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT Liposomes  
 (**fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT Enzymes, analysis  
 RL: ANT (Analyte); ANST (Analytical study)  
 (**fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT Immunoassay  
 (**fluorescence; fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)

IT Immunoassay  
 (immunofluorometric; **fluorescence assays** using

- substrates** incorporated in **polydiacetylene backbones**)
- IT 121207-31-6, BODIPY 493/503  
 RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)  
 (BODIPY 493/503; **fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)
- IT 209340-49-8  
 RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)  
 (BODIPY 630/650; **fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)
- IT 217190-24-4, BODIPY TR cadaverine  
 RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)  
 (BODIPY TR cadaverine; **fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)
- IT 203250-31-1, Dapoxyl (2-aminoethyl)sulfonamide  
 RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)  
 (Dapoxyl (2-aminoethyl)sulfonamide; **fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)
- IT 15492-51-0 15522-71-1, Tris(2,2,6,6,-tetramethyl-3,5-heptanedionato)europium 26093-31-2, 7-Amino-4-methylcoumarin 37758-47-7, Ganglioside GM1 64821-29-0, 16-(9-Anthroyloxy)palmitic acid 67000-89-9, 1-Pyrenebutanol 155773-68-5D, conjugates with antibodies 362596-00-7  
 RL: ARG (Analytical reagent use); MOA (Modifier or additive use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)  
 (**fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)
- IT 18194-24-6D, Dimyristoyl phosphatidylcholine, reaction products with tricosadiynoic acid 66990-30-5D, 10,12-Tricosadiynoic acid, reaction products with dimyristoyl phosphatidylcholine 66990-32-7D, 10,12-Pentacosadiynoic acid, UV-crosslinked 178560-65-1, 5,7-Docosadiynoic acid  
 RL: ARU (Analytical role, unclassified); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)  
 (**fluorescence assays** using **substrates** incorporated in **polydiacetylene backbones**)
- REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:315953 HCAPLUS

DOCUMENT NUMBER: 135:92926

TITLE: Influence of **Substrate** Properties on the Topochemical Polymerization of **Diacetylene** Monolayers

AUTHOR(S): Britt, D. W.; Hofmann, U. G.; Moebius, D.; Hell, S. W.

CORPORATE SOURCE: Max-Planck-Institute for Biophysical Chemistry,



SOURCE: Goettingen, D-37070, Germany  
 Langmuir (2001), 17(12), 3757-3765  
 CODEN: LANGD5; ISSN: 0743-7463  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

- AB The influence of the underlying substrate on the UV initiated polymn. of diacetylene lipid monolayers was studied using absorption spectroscopy and Brewster angle microscopy (BAM). The diacetylenes studied, having basic head groups are dimethylbis[2-(hexacosane-10,12-diynoxy)ethyl]ammonium bromide (BRONCO) and hexacosane-10,12-diynoic acid [2-[2-[2-(2-aminoethoxy)ethoxy]ethoxy]ethyl]amide. The substrate layers were octadecyltrichlorosilane (OTS), 10,12-pentacosadiynoic acid, and arachidic acid. The lipid/substrate affinity was tuned through choice of lipid head group and substrate properties. Lipids with pos. charged head groups, which readily polymn. into both blue (6.degree.) and red (16.degree.) polymer forms at the air/water interface, failed to polymerize when transferred to glass or hydrophobic glass (head groups facing ambient) at either temp. The BAM data revealed that the diacetylene film was disordered on hydrophobic glass, which likely impeded the topochem. polymn. On glass, however, BAM data showed a highly cryst. film identical to that seen at the air/water interface, suggesting that strong interactions between the pos. charged lipid head groups and the glass inhibited polymn. in this case. In agreement, when the lipid/substrate interactions were reduced, either by introducing a cadmium arachidate bilayer between the diacetylene film and the glass or by substituting mica for glass, a limited polymn. occurred, forming the red film exclusively. As a further test, monolayers of acidic diacetylene lipids were deposited on glass. In this case polymn. was possible in both blue and red forms but diminished as the transferred film was aged. These results suggest that a strong lipid/substrate affinity may impede the topochem. polymn., possibly by restricting the mobility of the lipids. By investigating polymn. as a function of substrate and head group chem., several factors influencing the lability of diacetylene films toward topochem. polymn. were elucidated.
- CC 35-4 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 66
- ST **diacetylene** lipid monolayer topochem polymn **substrate** effect; affinity lipid **substrate** polyacetylene crystallinity charge effect
- IT Polymer morphology  
 (cryst.; **substrate** charge and polarity effects on topochem. polymn. of lipid **diacetylene** monolayers and on crystallinity of polyacetylenes)
- IT Polymerization  
 (photopolymn., topochem.; **substrate** charge and polarity effects on topochem. polymn. of lipid **diacetylene** monolayers and on crystallinity of polyacetylenes)
- IT **Fluorescence**  
 Glass **substrates**  
 Photochromism  
 Thermochromism  
 Topochemical reaction  
 (**substrate** charge and polarity effects on topochem. polymn. of lipid **diacetylene** monolayers and on crystallinity of polyacetylenes)
- IT **Polydiacetylenes**  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (**substrate** charge and polarity effects on topochem. polymn. of lipid **diacetylene** monolayers and on crystallinity of

polyacetylenes)

IT Mica-group minerals, uses  
 RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
 (substrate; substrate charge and polarity effects  
 on topochem. polymn. of lipid diacetylene monolayers and on  
 crystallinity of polyacetylenes)

IT 66990-32-7, 10,12-Pentacosadiynoic acid 75495-21-5 348576-88-5  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT  
 (Reactant); PROC (Process)  
 (monomer; substrate charge and polarity effects on topochem.  
 polymn. of lipid diacetylene monolayers and on crystallinity  
 of polyacetylenes)

IT 66990-33-8P, 10,12-Pentacosadiynoic acid homopolymer 348576-90-9P,  
 Dimethylbis[2-(hexacosane-10,12-diynoyloxy)ethyl]ammonium  
 bromide-hexacosane-10,12-diynoic acid [2-[2-(2-(2-  
 aminoethoxy)ethoxy)ethoxy]ethyl]amide copolymer  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (substrate charge and polarity effects on topochem. polymn.  
 of lipid diacetylene monolayers and on crystallinity of  
 polyacetylenes)

IT 112-04-9, Octadecyltrichlorosilane 506-30-9, Arachidic acid  
 14923-81-0, Cadmium arachidate  
 RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
 (substrate; substrate charge and polarity effects  
 on topochem. polymn. of lipid diacetylene monolayers and on  
 crystallinity of polyacetylenes)

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2000:666967 HCAPLUS  
 DOCUMENT NUMBER: 133:234740  
 TITLE: Colorimetric detection method using polymer matrices  
 having lipids  
 INVENTOR(S): Jelinek, Raz  
 PATENT ASSIGNEE(S): Ben-Gurion University of the Negev, Israel  
 SOURCE: PCT Int. Appl., 41 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000055623	A2	20000921	WO 2000-IL158	20000314
WO 2000055623	A3	20010322		
W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
EP 1161688	A2	20011212	EP 2000-909610	20000314
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
PRIORITY APPLN. INFO.:			IL 1999-129003	A 19990315

WO 2000-IL158 W 20000314

- AB A method for detecting the presence of an analyte in a sample, said analyte being chem. non-reactive with lipids or with a polymer having an absorption band which may be shifted from a first wavelength in the visible region to a second wavelength in a visible region, which comprises: (a) providing a polymeric matrix comprising said lipids and said polymer; (b) introducing into said sample or into said polymeric matrix means enabling said analyte to cause a non-chem. change in said polymeric matrix; and (c) contacting the sample with the polymeric matrix and observing a color transition of the matrix, indicating the presence of the analyte. The peptide melittin was detected using a polymer matrix contg. **polydiacetylene** and dimyristoylphosphocholine.
- IC ICM G01N033-50
- CC 9-5 (Biochemical Methods)
- Section cross-reference(s): 79, 80
- ST colorimetry assay polymer matrix lipid; peptide melittin colorimetry **polydiacetylene** dimyristoylphosphocholine matrix
- IT Cations  
Ions  
(as **analyte**; colorimetric **detection** method using polymer matrixes having lipids)
- IT Membrane, biological  
(peptide, as **analyte**; colorimetric **detection** method using polymer matrixes having lipids)
- IT Cardiolipins  
Lipopolysaccharides  
Phosphatidylcholines, preparation  
Sphingomyelins  
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(polymer matrix with **polydiacetylene**; colorimetric detection method using polymer matrixes having lipids)
- IT **Polydiacetylenes**  
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(polymer matrix; colorimetric detection method using polymer matrixes having lipids)
- IT 57-88-5DP, Cholesterol, polymer matrix with **polydiacetylene**  
2001-95-8DP, Valinomycin, polymer matrix with **polydiacetylene**  
and dimyristoylphosphocholine 2644-64-6DP, Dipalmitoylphosphatidylcholine, polymer matrix with **polydiacetylene** 17090-79-8DP, Monensin, polymer matrix with **polydiacetylene** and dimyristoylphosphocholine 18656-38-7DP, polymer matrix with **polydiacetylene** 20255-95-2DP, polymer matrix with **polydiacetylene** 27987-87-7DP, **Polydiacetylene**, polymer matrix 52665-69-7DP, Ionophore A23187, polymer matrix with **polydiacetylene** and dimyristoylphosphocholine 64023-32-1DP, polymer matrix with **polydiacetylene** 85305-88-0DP, Galactosylceramide, polymer matrix with **polydiacetylene**  
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(colorimetric detection method using polymer matrixes having lipids)
- IT 293749-29-8DP, polymer matrix with **polydiacetylene** and dimyristoylphosphocholine  
RL: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(contg. FLAG epitope; colorimetric detection method using polymer matrixes having lipids)

ACCESSION NUMBER: 1999:819529 HCAPLUS  
 DOCUMENT NUMBER: 132:60102  
 TITLE: Nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials  
 INVENTOR(S): Charych, Deborah H.; Jonas, Ulrich  
 PATENT ASSIGNEE(S): Regents of the University of California, USA  
 SOURCE: PCT Int. Appl., 176 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 11  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9967423	A1	19991229	WO 1999-US14029	19990622
W: AU, CA, JP				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9947047	A1	20000110	AU 1999-47047	19990622
EP 1112377	A1	20010704	EP 1999-930522	19990622
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: US 1998-90266 P 19980622  
 WO 1999-US14029 W 19990622

AB The present invention relates to methods and compns. for the direct detection of analytes and membrane conformational changes through the detection of color changes in biopolymeric materials. In particular, the present invention provides for the direct colorimetric detection of analytes using nucleic acid ligands at surfaces or **polydiacetylene** liposomes and related mol. layer systems. Synthetic schemes are provided for the prepn. and immobilization of polydiacetylenic materials with various head groups.

IC C12Q001-68; G01N033-53; C12N011-00; C12M001-00; C07H021-04  
 CC 3-1 (Biochemical Genetics)  
 Section cross-reference(s): 9

ST nucleic acid coupled colorimetry analysis self assembly **polydiacetylene**

IT Toxins  
 RL: ANT (Analyte); ANST (Analytical study)  
 (Escherichia coli; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT Phosphatidylethanolamines, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (N-biotinyl, dopant for biopolymeric materials; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT Amines, **analysis**  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (allyl, self-assembling monomers; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT Films  
 Liposomes  
 (biopolymeric; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)

IT Toxins  
 RL: ANT (Analyte); ANST (Analytical study)  
 (cholera; nucleic acid-coupled colorimetric **analyte**

- detectors** using self-assembling polydiacetylenic materials)
- IT Molecular recognition
  - (complexes, non-nucleic acid ligand; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
- IT Surfactants
  - (dopant for biopolymeric materials; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
- IT Cardiolipins
  - Ceramides
  - Cerebrosides
  - Lysophosphatidylcholines
  - Phosphatidic acids
  - Phosphatidylcholines, uses
  - Phosphatidylethanolamines, uses
  - Phosphatidylglycerols
  - Phosphatidylinositols
  - Phosphatidylserines
  - Polyoxyalkylenes, uses
  - Sphingomyelins
  - Steroids, uses
  - RL: MOA (Modifier or additive use); USES (Uses)
    - (dopant for biopolymeric materials; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
- IT Functional groups
  - (hydrophilic groups, non-nucleic acid ligand; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
- IT Functional groups
  - (hydrophobic, non-nucleic acid ligand; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
- IT RNA
  - RL: **ANT (Analyte); ANST (Analytical study)**
    - (intron; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
- IT Chelating agents
  - Chromophores
  - Drugs
  - Electron acceptors
  - Electron donors
    - (non-nucleic acid ligand; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
- IT Carbohydrates, **analysis**
  - Proteins, general, **analysis**
  - Sialic acids
  - Trisaccharides
  - RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**
    - (non-nucleic acid ligand; nucleic acid-coupled colorimetric **analyte detectors** using self-assembling polydiacetylenic materials)
- IT Bacteria (Eubacteria)
  - Colorimeters
  - Colorimetry
  - Fungi
  - Hepatitis A virus
  - Hepatitis B virus

Human herpesvirus  
 Human herpesvirus 3  
 Human herpesvirus 4  
 Human immunodeficiency virus  
 Human immunodeficiency virus 1  
 Human poliovirus  
 Influenza virus  
 Neisseria gonorrhoeae  
 Nucleic acid hybridization  
 Parasite  
 Pathogen  
 Rabies virus  
 Retroviridae  
 Rhinovirus  
 Rubella virus  
 Self-assembly  
 Vaccinia virus  
 Variola virus  
 Vibrio vulnificus  
 Virus  
     (nucleic acid-coupled colorimetric **analyte detectors**  
     using self-assembling polydiacetylenic materials)  
 IT Agglutinins and Lectins  
 Antibodies  
 Antigens  
 DNA  
 Double stranded RNA  
 Enzymes, **analysis**  
 Hormones, animal, **analysis**  
 Nucleic acids  
 Receptors  
 Transcription factors  
 mRNA  
 rRNA  
 tRNA  
 RL: **ANT (Analyte); ANST (Analytical study)**  
     (nucleic acid-coupled colorimetric **analyte detectors**  
     using self-assembling polydiacetylenic materials)  
 IT Glycerophospholipids  
 RL: MOA (Modifier or additive use); USES (Uses)  
     (phosphatidylmethanols, dopant for biopolymeric materials; nucleic  
     acid-coupled colorimetric **analyte detectors** using  
     self-assembling polydiacetylenic materials)  
 IT **Polydiacetylenes**  
 RL: ARU (Analytical role, unclassified); DEV (Device component use);  
**ANST (Analytical study); USES (Uses)**  
     (polyamide-, nucleic acid-coupled colorimetric **analyte**  
     **detectors** using self-assembling polydiacetylenic materials)  
 IT Polyamides, **analysis**  
 RL: ARU (Analytical role, unclassified); DEV (Device component use);  
**ANST (Analytical study); USES (Uses)**  
     (polydiacetylene-, nucleic acid-coupled colorimetric  
     **analyte detectors** using self-assembling  
     polydiacetylenic materials)  
 IT Polymers, **analysis**  
 RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
     (polythiophenes, self-assembling monomers; nucleic acid-coupled  
     colorimetric **analyte detectors** using  
     self-assembling polydiacetylenic materials)  
 IT Alkenes, **analysis**

Alkynes  
 Imides  
 Siloxanes (nonpolymeric)  
 Urethanes  
 RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
 (self-assembling monomers; nucleic acid-coupled colorimetric  
**analyte detectors** using self-assembling  
 polydiacetylenic materials)

IT DNA  
 RL: **ANT (Analyte)**; **ANST (Analytical study)**  
 (single-stranded; nucleic acid-coupled colorimetric **analyte**  
**detectors** using self-assembling polydiacetylenic materials)

IT Fluoropolymers, uses  
 Glass, uses  
 Mica-group minerals, uses  
 RL: DEV (Device component use); USES (Uses)  
 (solid support; nucleic acid-coupled colorimetric **analyte**  
**detectors** using self-assembling polydiacetylenic materials)

IT Oligosaccharides, **analysis**  
 RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
 (tetrasaccharides, non-nucleic acid ligand; nucleic acid-coupled  
 colorimetric **analyte detectors** using  
 self-assembling polydiacetylenic materials)

IT Ethers, **analysis**  
 RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
 (vinyl, self-assembling monomers; nucleic acid-coupled colorimetric  
**analyte detectors** using self-assembling  
 polydiacetylenic materials)

IT Detergents  
 (zwitterionic, dopant for biopolymeric materials; nucleic acid-coupled  
 colorimetric **analyte detectors** using  
 self-assembling polydiacetylenic materials)

IT 66990-32-7P, 10,12-Pentacosadiynoic acid 92266-90-5P,  
 10,12-Pentacosadiyn-1-ol 120650-77-3P 144314-93-2P 155020-22-7P  
 162635-75-8P 211996-57-5P 211996-58-6P  
 RL: ARU (Analytical role, unclassified); DEV (Device component use); SPN  
 (Synthetic preparation); **ANST (Analytical study)**; PREP  
 (Preparation); USES (Uses)  
 (chem. synthesis of biopolymeric materials; nucleic acid-coupled  
 colorimetric **analyte detectors** using  
 self-assembling polydiacetylenic materials)

IT 929-75-9, Tetraethylene glycol diamine 136766-23-9  
 RL: RCT (Reactant)  
 (chem. synthesis of biopolymeric materials; nucleic acid-coupled  
 colorimetric **analyte detectors** using  
 self-assembling polydiacetylenic materials)

IT 136766-21-7P 137870-33-8P 146064-05-3P 146064-06-4P 146064-07-5P  
 146064-08-6P 146064-09-7P 146064-10-0P 228723-67-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (chem. synthesis of biopolymeric materials; nucleic acid-coupled  
 colorimetric **analyte detectors** using  
 self-assembling polydiacetylenic materials)

IT 57-88-5, Cholesterol, uses 83-44-3 123-78-4, D-erythro-Sphingosine  
 151-21-3, Sodium dodecyl sulfate, uses **460-12-8D**,  
**Diacetylene**, derivs. 9036-19-5, Octoxynol 25322-68-3  
 29557-51-5, Dodecyl phosphocholine 34344-66-6, Polysorbic acid  
 58846-77-8, Decyl glucoside  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (dopant for biopolymeric materials; nucleic acid-coupled colorimetric  
**analyte detectors** using self-assembling

polydiacetylenic materials)  
 IT 37758-47-7, Ganglioside GM1 59247-13-1, Ganglioside GT1b  
 RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
 (non-nucleic acid ligand; nucleic acid-coupled colorimetric  
**analyte detectors** using self-assembling  
 polydiacetylenic materials)  
 IT 9001-84-7, Phospholipase A2 9001-86-9, Phospholipase C 9001-87-0,  
 Phospholipase D 9002-61-3, Chorionic gonadotropin 9026-81-7, Nuclease  
 9031-50-9, Nucleotidyltransferase 9031-56-5, Ligase 37209-28-2,  
 Bungarotoxin 120178-12-3, Telomerase  
 RL: **ANT (Analyte); ANST (Analytical study)**  
 (nucleic acid-coupled colorimetric **analyte detectors**  
 using self-assembling polydiacetylenic materials)  
 IT 138305-24-5, 5,7-Pentacosadiynoic acid 178560-65-1, 5,7-Docosadiynoic  
 acid  
 RL: ARU (Analytical role, unclassified); RCT (Reactant); **ANST**  
**(Analytical study)**  
 (self-assembling monomers; nucleic acid-coupled colorimetric  
**analyte detectors** using self-assembling  
 polydiacetylenic materials)  
 IT 62-53-3D, Aniline, compds. 79-06-1D, Acrylamide, compds. 79-41-4D,  
 Methacrylic acid, compds. 109-97-7D, Pyrrole, compds. 110-02-1D,  
 Thiophene, compds. 1121-34-2D, Malic anhydride, compds. 19295-34-2D,  
 Vinylpyridinium, compds.  
 RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
 (self-assembling monomers; nucleic acid-coupled colorimetric  
**analyte detectors** using self-assembling  
 polydiacetylenic materials)  
 IT 7440-21-3, Silicon, uses 7440-57-5, Gold, uses 7631-86-9, Silica, uses  
 9002-84-0, Teflon 9002-88-4, Polyethylene 9003-53-6, Polystyrene  
 9012-36-6, Sepharose 9014-76-0, Sephadex 25014-41-9D,  
 Polyacrylonitrile, compds.  
 RL: DEV (Device component use); **USES (Uses)**  
 (solid support; nucleic acid-coupled colorimetric **analyte**  
**detectors** using self-assembling polydiacetylenic materials)  
 REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1999:172649 HCAPLUS  
 DOCUMENT NUMBER: 130:220147  
 TITLE: Sol-gel matrixes and their preparation for direct  
 colorimetric **detection of analytes**  
 INVENTOR(S): Charych, Deborah H.; Sasaki, Darryl; Yamanaka, Stacey  
 PATENT ASSIGNEE(S): Regents of the University of California, USA  
 SOURCE: PCT Int. Appl., 79 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 11  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9910743	A1	19990304	WO 1998-US17982	19980831
W:	AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			



RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,  
FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,  
CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6022748 A 20000208 US 1997-920501 19970829  
AU 9892116 A1 19990316 AU 1998-92116 19980831  
EP 1002234 A1 20000524 EP 1998-944612 19980831

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO

PRIORITY APPLN. INFO.: US 1997-920501 A 19970829  
WO 1998-US17982 W 19980831

AB The present invention relates to methods and compns. for the direct  
detection of analytes using color changes that occur in immobilized  
biopolymeric material in response to selective binding of analytes to  
their surface. In particular, the present invention provides methods and  
compns. related to the encapsulation of biopolymeric material into metal  
oxide glass using the sol-gel method. Liposomes of sialic acid-linked  
5,7-docosadiynoic acid polymer entrapped in silicate glass provided a  
vivid colorimetric response to influenza A virus.

IC ICM G01N033-546

ICS G01N033-552

CC 9-1 (Biochemical Methods)

Section cross-reference(s): 79, 80

IT Bacteria (Eubacteria)

Molecules

Pathogen

(as **analytes**; sol-gel matrixes and their prepn. for direct  
colorimetric **detection of analytes**)

IT Antibodies

Enzymes, analysis

RL: ANT (Analyte); ANST (Analytical study)

(as **analytes**; sol-gel matrixes and their prepn. for direct  
colorimetric **detection of analytes**)

IT Apparatus

(badge, biopolymer encapsulated in sol-gel glass as; sol-gel matrixes  
and their prepn. for direct colorimetric **detection of**  
**analytes**)

IT Ligands

RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device  
component use); ANST (Analytical study); BIOL (Biological  
study); PROC (Process); USES (Uses)

(biopolymer contg., immobilization of, in metal oxide glasses; sol-gel  
matrixes and their prepn. for direct colorimetric **detection**  
**of analytes**)

IT Self-assembly

(biopolymers from monomers undergoing, immobilization of, in metal  
oxide glasses; sol-gel matrixes and their prepn. for direct  
colorimetric **detection of analytes**)

IT Allyl amines

Imides

**Polydiacetylenes**

Polyolefins

Siloxanes (nonpolymeric)

Urethanes

RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device  
component use); RCT (Reactant); ANST (Analytical study); BIOL  
(Biological study); PROC (Process); USES (Uses)

(biopolymers from, immobilization of, in metal oxide glasses; sol-gel  
matrixes and their prepn. for direct colorimetric **detection**  
**of analytes**)

IT Molecular recognition

- (complexes from, immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Influenza A virus  
(**detection** of, with sol-gel encapsulated sialic acid-linked **polydiacetylene**; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Cholera toxin  
RL: **ANT (Analyte)**; **ANST (Analytical study)**  
(**detection** of, with sol-gel encapsulated sialic acid-linked **polydiacetylene**; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Oxides (inorganic), biological studies  
RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)  
(glasses, immobilization of biopolymers in; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Molecules  
(hydrophilic, immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Molecules  
(hydrophobic, immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Chelating agents  
Chromophores  
Drugs  
Electron acceptors  
Electron donors  
Films  
Liposomes  
(immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Receptors  
RL: **ANT (Analyte)**; ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)  
(immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Antigens  
Biopolymers  
Carbohydrates, biological studies  
Nucleic acids  
Peptides, biological studies  
RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)  
(immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Buffers  
Sonication  
(in immobilization of biopolymers in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection**)

- of analytes)

IT Acids, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (in immobilization of biopolymers in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Antibody immobilization  
 (in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Immobilization (molecular)  
 (of biopolymers in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Polymers, biological studies  
 RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)  
 (polythiophenes, biopolymers from, immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Oscillators  
 (quartz; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Membranes (nonbiological)  
 (receptors or fragments of, as **analytes**; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT **Analysis**  
 Colorimetry  
 Electrodes  
 Gas **analysis**  
 Optical fibers  
 Pharmaceutical **analysis**  
 Scintillation  
 Spectroscopy  
 (sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Glass, biological studies  
 RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)  
 (sol-gel, biopolymer encapsulated in; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT Analytical apparatus  
 (supported metal oxide glass-immobilized biopolymers; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT 1132-61-2, 3-[N-Morpholino]propanesulfonic acid  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (as buffer in immobilization of biopolymers in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT 62-53-3D, Aniline, compds. 79-06-1D, Acrylamide, compds. 109-93-3, Vinylether 109-97-7D, Pyrrole, compds. 110-02-1D, Thiophene, compds. 1121-34-2, Malic anhydride 18358-13-9D, Methacrylate, compds., biological studies 19295-34-2 66990-32-7, 10,12-Pentacosadiynoic acid 138305-24-5, 5,7-Pentacosadiynoic acid 178560-65-1, 5,7-Docosadiynoic acid  
 RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL

- (Biological study); PROC (Process); USES (Uses)  
(biopolymers from, immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT 221056-30-0  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(films; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT 681-84-5D, Tetramethylorthosilicate, glasses  
RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)  
(immobilization of biopolymers in; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT 58-85-5, Biotin  
RL: ARG (Analytical reagent use); BPR (Biological process); DEV (Device component use); RCT (Reactant); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)  
(immobilization of, in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT 7647-01-0, Hydrochloric acid, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(in immobilization of biopolymers in metal oxide glasses; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT 136766-21-7P 146064-08-6P 146064-09-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(in sialic acid ligand attachment to **diacetylene**; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT 37758-47-7, Ganglioside GM1  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(liposomes of or polymd. **diacetylene** contg.; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT 66990-33-8D, sialic acid-linked 212955-17-4D, sialic acid-linked  
RL: ARG (Analytical reagent use); BPR (Biological process); PRP (Properties); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)  
(liposomes, entrapped in sol-gel glass, influenza virus effect on; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT 27987-87-7P, **Diacetylene** polymer  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(liposomes, sol-gel-entrapped; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT 108-24-7 6066-82-6, N-Hydroxysuccinimide 136766-23-9  
RL: RCT (Reactant)  
(reaction of, in sialic acid ligand attachment to **diacetylene**; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)
- IT 141-43-5DP, Ethanolamine, reaction products with N-hydroxysuccinimide-modified **diacetylene** deriv. polymers 929-75-9DP, Tetraethylene glycol diamine, reaction products with N-hydroxysuccinimide-modified **diacetylene** deriv. polymers  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(reaction of, in sialic acid ligand attachment to **diacetylene**; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)

IT 460-12-8, Diacetylene  
 RL: RCT (Reactant)  
 (sialic acid ligand attachment to; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)

IT 56-23-5, Carbon tetrachloride, **analysis** 60-29-7, Diethylether, **analysis** 67-66-3, **analysis** 71-36-3, 1-Butanol, **analysis** 71-43-2, Benzene, **analysis** 75-09-2, Dichloromethane, **analysis** 108-88-3, Toluene, **analysis** 110-82-7, Cyclohexane, **analysis** 111-27-3, 1-Hexanol, **analysis** 111-87-5, 1-Octanol, **analysis**  
 RL: ANT (Analyte); ANST (Analytical study)  
 (sol-gel encapsulated polydiacetylene response to; sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)

IT 460-12-8D, Diacetylene, derivs., polymers, sialic acid derivs.  
 RL: ARG (Analytical reagent use); BPR (Biological process); PRP (Properties); ~~ANST~~ (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)  
 (sol-gel matrixes and their prepn. for direct colorimetric **detection of analytes**)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1998:568970 HCAPLUS  
 DOCUMENT NUMBER: 129:200179  
 TITLE: Methods and compns. for **detection of analytes** using color changes that occur in biopolymeric material in response to selective binding of **analytes**  
 INVENTOR(S): Stevens, Raymond; Quan, Cheng  
 PATENT ASSIGNEE(S): The Regents of the University of California, USA  
 SOURCE: PCT Int. Appl., 121 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 11  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9836263	A1	19980820	WO 1998-US2777	19980213
W: AU, CA, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9861627	A1	19980908	AU 1998-61627	19980213
EP 1007943	A1	20000614	EP 1998-906389	19980213
R: CH, DE, FR, GB, LI				

PRIORITY APPLN. INFO.: US 1997-38383 P 19970214  
 WO 1998-US2777 W 19980213

AB The present invention relates to methods and compns. for the direct detection of analytes using color changes that occur in biopolymeric material in response to selective binding of analytes. The invention provides biopolymeric materials comprising a plurality of polymd. self-assembling monomers and one or more protein ligands, wherein the biopolymeric materials change color in the presence of analyte. In some embodiments, the protein ligands are selected from the group consisting of peptides, proteins, antibodies, receptors, channels, and combinations thereof, although the present invention contemplates all protein ligands. In specific embodiments, the antibodies of the presently claimed invention

- are directed against Chlamydia.
- IC ICM G01N021-00  
ICS G01N031-20; G01N033-544; G01N033-538; G01N033-53; G01N033-567;  
G01N033-537; G01N033-543; C12M001-00; C12N001-00; C12N001-20
- CC 9-16 (Biochemical Methods)  
Section cross-reference(s): 6, 10, 80
- IT Polysiloxanes, **analysis**  
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
(anilines; methods and compns. for **detection** of  
**analytes** using color changes that occur in biopolymeric  
material in response to selective binding of **analytes**)
- IT Films  
Liposomes  
(biopolymeric; methods and compns. for **detection** of  
**analytes** using color changes that occur in biopolymeric  
material in response to selective binding of **analytes**)
- IT Protein receptors  
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
(cholera toxin, ganglioside GM1; methods and compns. for  
**detection** of **analytes** using color changes that occur  
in biopolymeric material in response to selective binding of  
**analytes**)
- IT Molecular recognition  
(complexes; methods and compns. for **detection** of  
**analytes** using color changes that occur in biopolymeric  
material in response to selective binding of **analytes**)
- IT Amino acids, **analysis**  
Sialic acids  
RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
(**diacetylene** deriv.; methods and compns. for  
**detection** of **analytes** using color changes that occur  
in biopolymeric material in response to selective binding of  
**analytes**)
- IT Diseases (animal)  
(markers; methods and compns. for **detection** of  
**analytes** using color changes that occur in biopolymeric  
material in response to selective binding of **analytes**)
- IT Amino group  
Bacteria (Eubacteria)  
Biosensors  
Blood  
Blood **analysis**  
Bond  
Buffers  
Carboxyl group  
Cell (biological)  
Chelating agents  
Chlamydia  
Chromophores  
Color  
Color reaction  
Colorimetry  
Conformation (protein)  
Coupling agents  
Dopants  
Drugs  
Electron acceptors  
Electron donors  
Environmental pollution  
Escherichia coli

Filters  
 Formyl group  
 Fungi  
 Hepatitis A virus  
 Hepatitis B virus  
 Human herpesvirus  
 Human herpesvirus 3  
 Human herpesvirus 4  
 Human immunodeficiency virus  
 Human poliovirus  
 Hydrophilicity  
 Hydrophobicity  
 Hydroxyl group  
 Immobilization (molecular)  
 Immunoassay  
 Influenza virus  
 Ions  
 Molecular topology  
 Mycobacterium tuberculosis  
 Neisseria gonorrhoeae  
 Onchocerca  
 Organic solvents  
 Parasite  
 Pathogen  
 Photopolymerization  
 Plasmodium (malarial genus)  
 Plasmodium falciparum  
 Protein immobilization  
 Rabies virus  
 Reoviridae  
 Rhinovirus  
 Rubella virus  
 Salmonella  
 Self-assembly  
 Self-association  
 Spectroscopy  
 Streptococcus  
 Sulfhydryl group  
 Surfactants  
 Toxoplasma gondii  
 Trypanosoma  
 Vaccinia virus  
 Variola virus  
 Vibrio vulnificus  
 Virus

(methods and compns. for **detection of analytes**  
 using color changes that occur in biopolymeric material in response to  
 selective binding of **analytes**)

IT DNA

Enzymes, **analysis**  
 Genetic elements  
 Hormones (animal), **analysis**  
 Lectins

RL: **ANT (Analyte); ANST (Analytical study)**

(methods and compns. for **detection of analytes**  
 using color changes that occur in biopolymeric material in response to  
 selective binding of **analytes**)

IT Antibodies

Ligands  
 Proteins (general), **analysis**

- RL: **ANT (Analyte)**; ARU (Analytical role, unclassified); BPR (Biological process); PRP (Properties); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process)  
 (methods and compns. for **detection of analytes**  
 using color changes that occur in biopolymeric material in response to selective binding of **analytes**)
- IT Volatile organic compounds  
 RL: **ANT (Analyte)**; ARU (Analytical role, unclassified); PRP (Properties); **ANST (Analytical study)**  
 (methods and compns. for **detection of analytes**  
 using color changes that occur in biopolymeric material in response to selective binding of **analytes**)
- IT Cholera toxin  
 RL: **ANT (Analyte)**; BSU (Biological study, unclassified); PRP (Properties); **ANST (Analytical study)**; BIOL (Biological study)  
 (methods and compns. for **detection of analytes**  
 using color changes that occur in biopolymeric material in response to selective binding of **analytes**)
- IT Alkenes, **analysis**  
 Alkynes  
 Allyl amines  
 Antigens  
 Carbohydrates, **analysis**  
 Cardiolipins  
 Ceramides  
 Cerebrosides  
 Fluoropolymers, **analysis**  
 Glass, **analysis**  
 Imides  
 Ion channel  
 Lysophosphatidylcholines  
 Mica-group minerals, **analysis**  
 Nucleic acids  
 Phosphatidic acids  
 Phosphatidylcholines, **analysis**  
 Phosphatidylethanolamines, **analysis**  
 Phosphatidylglycerols  
 Phosphatidylinositols  
 Phosphatidylserines  
 Polyoxyalkylenes, **analysis**  
 Sphingomyelins  
 Steroids, **analysis**  
 Trisaccharides  
 Urethanes  
 Vinyl ethers  
 RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
 (methods and compns. for **detection of analytes**  
 using color changes that occur in biopolymeric material in response to selective binding of **analytes**)
- IT Biopolymers  
 Peptides, **analysis**  
 Receptors  
 RL: ARU (Analytical role, unclassified); BPR (Biological process); PRP (Properties); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process)  
 (methods and compns. for **detection of analytes**  
 using color changes that occur in biopolymeric material in response to selective binding of **analytes**)
- IT Escherichia enterotoxins  
 RL: ARU (Analytical role, unclassified); BSU (Biological study,



- unclassified); **ANST (Analytical study)**; BIOL (Biological study)  
 (methods and compns. for **detection of analytes**  
 using color changes that occur in biopolymeric material in response to  
 selective binding of **analytes**)
- IT Membranes (nonbiological)  
 (monolayer; methods and compns. for **detection of**  
**analytes** using color changes that occur in biopolymeric  
 material in response to selective binding of **analytes**)
- IT Glycerophospholipids  
 RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
 (phosphatidylmethanol; methods and compns. for **detection of**  
**analytes** using color changes that occur in biopolymeric  
 material in response to selective binding of **analytes**)
- IT Lipids, **analysis**  
 RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
 (polymd.; methods and compns. for **detection of**  
**analytes** using color changes that occur in biopolymeric  
 material in response to selective binding of **analytes**)
- IT Polymerization  
 (polymerizable groups; methods and compns. for **detection of**  
**analytes** using color changes that occur in biopolymeric  
 material in response to selective binding of **analytes**)
- IT Polymers, **analysis**  
 RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
 (polythiophenes; methods and compns. for **detection of**  
**analytes** using color changes that occur in biopolymeric  
 material in response to selective binding of **analytes**)
- IT Oligosaccharides, **analysis**  
 RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
 (tetrasaccharides; methods and compns. for **detection of**  
**analytes** using color changes that occur in biopolymeric  
 material in response to selective binding of **analytes**)
- IT Detergents  
 (zwitterionic; methods and compns. for **detection of**  
**analytes** using color changes that occur in biopolymeric  
 material in response to selective binding of **analytes**)
- IT 7440-21-3, Silicon, **analysis**  
 RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
 (chips; methods and compns. for **detection of analytes**  
 using color changes that occur in biopolymeric material in response to  
 selective binding of **analytes**)
- IT 50-70-4, D-Glucitol, **analysis** 56-23-5, Carbon tetrachloride,  
**analysis** 57-50-1, Sucrose, **analysis** 59-23-4,  
 Galactose, **analysis** 60-29-7, Diethylether, **analysis**  
 67-66-3, **analysis** 71-36-3, 1-Butanol, **analysis**  
 71-43-2, Benzene, **analysis** 75-09-2, **analysis**  
 108-88-3, **analysis** 110-54-3, Hexane, **analysis**  
 110-82-7, Cyclohexane, **analysis** 111-27-3, 1-Hexanol,  
**analysis**  
 RL: **ANT (Analyte)**; ARU (Analytical role, unclassified); PRP  
 (Properties); **ANST (Analytical study)**  
 (methods and compns. for **detection of analytes**  
 using color changes that occur in biopolymeric material in response to  
 selective binding of **analytes**)
- IT 56-40-6D, Glycine, **diacetylene** derivs. 56-85-9D, L-Glutamine,  
**diacetylene** derivs. 56-86-0D, L-Glutamic acid,  
**diacetylene** derivs. 56-89-3D, Cystine, **diacetylene**  
 derivs. 57-88-5, Cholesterol, **analysis** 62-53-3D,  
 Benzenamine, siloxane derivs. 63-42-3D, Lactose, **diacetylene**  
 derivs. 63-91-2D, L-Phenylalanine, **diacetylene** derivs.

71-00-1D, L-Histidine, **diacetylene** derivs. 73-32-5D,  
L-Isoleucine, **diacetylene** derivs. 79-06-1D, 2-Propenamide,  
derivs. 83-44-3 109-97-7D, Pyrrole, derivs. 110-02-1D, Thiophene,  
derivs. 111-87-5, 1-Octanol, **analysis** 123-78-4,  
D-Erythro-Sphingosine 151-21-3, **analysis** 460-12-8D,  
**diacetylene**, derivs. 583-93-7D, 2,6-Diaminopimelic acid,  
**diacetylene** derivs. 1121-34-2, Malic anhydride 4067-16-7D,  
Pentaethylenehexamine, **diacetylene** derivs. 7440-57-5, Gold,  
**analysis** 7631-86-9, Silica, **analysis** 9002-84-0,  
Teflon 9002-88-4 9003-53-6, Polystyrene 9012-36-6, Sepharose  
9014-76-0, Sephadex 9036-19-5, Octoxynol 18358-13-9D, Methacrylate,  
derivs., **analysis** 19295-34-2, Vinylpyridinium 25014-41-9,  
Polyacrylonitrile 25322-68-3 29557-51-5, Dodecylphosphocholine  
37758-47-7, Ganglioside GM1 58846-77-8, Decylglucoside 59247-13-1,  
Ganglioside GT1b 60676-86-0, Silica, vitreous 66990-32-7,  
10,12-Pentacosadiynoic acid 120650-77-3 137870-33-8 138305-24-5,  
5,7-Pentacosadiynoic acid 144314-93-2 146064-05-3 146064-07-5  
155020-22-7 162635-75-8 178560-65-1, 5,7-Docosadiynoic acid  
211996-58-6

RL: ARU (Analytical role, unclassified); **ANST (Analytical study)**  
(methods and compns. for **detection of analytes**  
using color changes that occur in biopolymeric material in response to  
selective binding of **analytes**)

IT 9001-51-8, Hexokinase

RL: ARU (Analytical role, unclassified); PRP (Properties); **ANST**  
(**Analytical study**)  
(methods and compns. for **detection of analytes**  
using color changes that occur in biopolymeric material in response to  
selective binding of **analytes**)

IT 27987-87-7, **Polydiacetylene**

RL: ARU (Analytical role, unclassified); PRP (Properties); RCT (Reactant);  
**ANST (Analytical study)**  
(methods and compns. for **detection of analytes**  
using color changes that occur in biopolymeric material in response to  
selective binding of **analytes**)

IT 92266-90-5P, 10,12-Pentacosadiyn-1-ol

RL: ARU (Analytical role, unclassified); RCT (Reactant); SPN (Synthetic  
preparation); **ANST (Analytical study)**; PREP (Preparation)  
(methods and compns. for **detection of analytes**  
using color changes that occur in biopolymeric material in response to  
selective binding of **analytes**)

IT 144224-70-4DP, **polydiacetylene** derivs. 194152-41-5P

194152-42-6P 194152-43-7P 194152-44-8P 211996-57-5P  
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation);  
**ANST (Analytical study)**; PREP (Preparation)  
(methods and compns. for **detection of analytes**  
using color changes that occur in biopolymeric material in response to  
selective binding of **analytes**)

IT 50-99-7, D-Glucose, biological studies

RL: BPR (Biological process); BIOL (Biological study); PROC (Process)  
(methods and compns. for **detection of analytes**  
using color changes that occur in biopolymeric material in response to  
selective binding of **analytes**)

IT 10108-64-2, Cadmium dichloride

RL: MSC (Miscellaneous); PRP (Properties)  
(methods and compns. for **detection of analytes**  
using color changes that occur in biopolymeric material in response to  
selective binding of **analytes**)

IT 100-58-3 107-15-3, 1,2-Ethanediamine, reactions 141-43-5, reactions

929-75-9, Tetraethylene glycol diamine 3282-30-2,

Trimethylacetylchloride 6066-82-6, N-Hydroxy succinimide 63488-10-8  
81357-07-5 136766-23-9 194152-37-9

RL: RCT (Reactant)

(methods and compns. for **detection of analytes**

using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT 929-75-9DP, Tetraethylene glycol diamine, **polydiacetylene**  
derivs. 6066-82-6DP, N-Hydroxy succinimide, **polydiacetylene**  
derivs. 94598-32-0P 136766-21-7P 146064-08-6P 146064-09-7P  
194152-38-0P 194152-39-1P 194152-40-4P 211996-51-9DP,  
**polydiacetylene** derivs. 211996-59-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

(methods and compns. for **detection of analytes**

using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

IT 107-15-3DP, 1,2-Ethanediamine, **polydiacetylene** derivs.  
141-43-5DP, **polydiacetylene** derivs.

RL: SPN (Synthetic preparation); PREP (Preparation)

(methods and compns. for **detection of analytes**

using color changes that occur in biopolymeric material in response to selective binding of **analytes**)

L26 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:468472 HCAPLUS

DOCUMENT NUMBER: 129:213804

TITLE: **Diacetylene** Chelator Lipids as  
**Support** for Immobilization and Imaging of  
Proteins by Atomic Force Microscopy

AUTHOR(S): Dorn, Ingmar T.; Hofmann, Ulrich G.; Peltonen, Jouko;  
Tampe, Robert

CORPORATE SOURCE: Lehrstuhl fuer Biophysik E22, Technische Universitaet  
Muenchen, Garching, D-85747, Germany

SOURCE: Langmuir (1998), 14(17), 4836-4842  
CODEN: LANGD5; ISSN: 0743-7463

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Chelator lipids represent a powerful and flexible tool to immobilize,  
orient, and crystallize histidine-tagged proteins at interfaces. To  
produce stable two-dimensional polymers that are biofunctional, we  
synthesized diacetylene lipids carrying a metal-chelating headgroup.  
These lipids were characterized at the air-water interface with respect to  
their thermodyn. properties, complex formation, and photopolymn. using film  
balance techniques combined with epic-fluorescence microscopy. Polymd.  
monolayers were transferred onto solid supports and reversible binding of  
histidine-tagged protein/DNA complexes was followed by at. force  
microscopy. The versatility of the chelator lipid concept may open the  
possibility to examine structure and function of proteins or multiprotein  
assemblies under native conditions and in real time by scanning probe  
microscopy.

CC 9-16 (Biochemical Methods)

Section cross-reference(s): 6

ST **diacetylene** chelator lipid **support** immobilization  
protein; atomic force microscopy protein chelator lipid

IT Heat-shock factors

RL: PRP (Properties)

(HSF24/DNA complex; **diacetylene** chelator lipids as  
**support** for immobilization and imaging of proteins by at. force  
microscopy)

IT DNA complexes

RL: PRP (Properties)  
 (HSF24/DNA; **diacetylene** chelator lipids as **support**  
 for immobilization and imaging of proteins by at. force microscopy)

IT Atomic force microscopy  
 Chelating agents  
**Fluorescence** microscopy  
 Immobilization (molecular)  
 Scanning probe microscopy  
 (**diacetylene** chelator lipids as **support** for  
 immobilization and imaging of proteins by at. force microscopy)

IT Lipids, biological studies  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (**diacetylene** chelator lipids as **support** for  
 immobilization and imaging of proteins by at. force microscopy)

IT 112-04-9, Silane, trichlorooctadecyl-  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (**diacetylene** chelator lipids as **support** for  
 immobilization and imaging of proteins by at. force microscopy)

IT 7440-21-3, Silicon, uses  
 RL: DEV (Device component use); USES (Uses)  
 (**diacetylene** chelator lipids as **support** for  
 immobilization and imaging of proteins by at. force microscopy)

IT 7718-54-9, Nickel chloride, uses 212561-90-5  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (**diacetylene** chelator lipids as **support** for  
 immobilization and imaging of proteins by at. force microscopy)

IT 108-30-5, reactions 111-42-2, Diethanolamine, reactions 538-75-0,  
 Dicyclohexylcarbodiimide 6066-82-6, N-Hydroxysuccinimide 24424-99-5,  
 Di-tert-butyl-dicarbonate 66990-32-7, 10,12-Pentacosadiynoic acid  
 205379-08-4  
 RL: RCT (Reactant)  
 (**diacetylene** chelator lipids as **support** for  
 immobilization and imaging of proteins by at. force microscopy)

IT 103898-11-9P 212561-84-7P 212561-85-8P 212561-86-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (**diacetylene** chelator lipids as **support** for  
 immobilization and imaging of proteins by at. force microscopy)

IT 212561-87-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (**diacetylene** chelator lipids as **support** for  
 immobilization and imaging of proteins by at. force microscopy)

L26 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:517575 HCAPLUS

DOCUMENT NUMBER: 127:173472

TITLE: Polymeric film, assay and method for direct  
 colorimetric **detection of analytes**

INVENTOR(S): Charych, Deborah; Nagy, John

PATENT ASSIGNEE(S): Regents of the University of California, USA; Charych,  
 Deborah; Nagy, John

SOURCE: PCT Int. Appl., 54 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 11

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9727316	A1	19970731	WO 1997-US1291	19970124

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

US 6001556 A 19991214 US 1996-592724 19960126  
 CA 2244098 AA 19970731 CA 1997-2244098 19970124  
 AU 9718422 A1 19970820 AU 1997-18422 19970124  
 AU 715973 B2 20000210  
 EP 883690 A1 19981216 EP 1997-904003 19970124

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

BR 9707207 A 19990720 BR 1997-7207 19970124  
 JP 2000506378 T2 20000530 JP 1997-527078 19970124

PRIORITY APPLN. INFO.: US 1996-592724 A 19960126  
 US 1992-976697 B2 19921113  
 US 1992-982189 B2 19921125  
 US 1993-159927 B1 19931130  
 WO 1997-US1291 W 19970124

AB A polymd. film, assay and method for direct detection of analytes using observable spectral changes in monomol. films which occur upon the analytes selective binding to the film.

IC ICM C12Q001-00  
 ICS G01N033-53; G01N033-92; G01N021-03

CC 9-1 (Biochemical Methods)  
 Section cross-reference(s): 64

IT 46755-94-6, (-)-1,1-Diphenyl-1,2-propanediol 142738-70-3

RL: NUU (Other use, unclassified); USES (Uses)  
 (synthesis of lipid **diacetylene** analogs of di-Ph propanediol as polymd. bilayer film for direct colorimetric **detection of analytes**)

IT 194152-37-9

RL: RCT (Reactant)  
 (synthesis of lipid **diacetylene** analogs of di-Ph propanediol as polymd. bilayer film for direct colorimetric **detection of analytes**)

IT 194152-38-0P 194152-39-1P 194152-40-4P 194152-41-5P 194152-42-6P  
 194152-43-7P 194152-44-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis of lipid **diacetylene** analogs of di-Ph propanediol as polymd. bilayer film for direct colorimetric **detection of analytes**)

L26 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:452191 HCAPLUS

DOCUMENT NUMBER: 122:209222

TITLE: **Fluorescent** lipid polymer-macromolecular ligand compositions as detection element in ligand **assays**

INVENTOR(S): Saul, Tom; Der-Balian, Georges; Kenney, Paul; Mathis, Heidi; Johnson, Shirley; Ribbi, Hans; Witty, Tom

PATENT ASSIGNEE(S): Biocircuits Corp., USA

SOURCE: PCT Int. Appl., 26 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9502183	A1	19950119	WO 1994-US7636	19940707
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5415999	A	19950516	US 1993-89975	19930709
CA 2141936	AA	19950119	CA 1994-2141936	19940707
EP 660931	A1	19950705	EP 1994-921490	19940707
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 08501883	T2	19960227	JP 1994-504162	19940707
US 5618735	A	19970408	US 1995-405549	19950316
PRIORITY APPLN. INFO.:			US 1993-89975	19930709
			WO 1994-US7636	19940707

AB Methods and compns. are provided for the detection of analytes. The method employs a fluorescence prodn. layer which comprises a fluorescent polyimd. polyunsatd. lipid layer in assocn. with a ligand which is a member of a specific binding pair, where the ligand is competitive with the analyte for the complementary binding member or is a complementary binding member. By providing for a fluorescence modulation reagent which binds to the fluorescence prodn. layer in proportion to the amt. of analyte in the sample, by measuring the resulting fluorescence after carrying out the assay methodol., the amt. of analyte can be detd. quant. An example is given of the detn. of T4 in blood plasma by using a T4-bovine serum albumin conjugate, anti-T4-alk. phosphatase conjugate, and a polyimd. polyunsatd. lipid layer prepd. from N-(2',3'-dihydroxy)propyl-3-pentaeicosan-10,12-diynamide.

IC ICM G01N033-53

ICS G01N021-01

CC 9-5 (Biochemical Methods)

Section cross-reference(s): 2

ST ligand **assay fluorescent** lipid polymer biopolymer;  
immunoassay fluorescent lipid biopolymer conjugate;  
plasma thyroxine detn **fluorescence immunoassay** sensor

IT Sensors

(**fluorescent** lipid polymer macromol. ligand compns. as  
detection elements in ligand **assays**)

IT Blood analysis

**Immunoassay**

Polymer-supported reagents

(**fluorescent** lipid polymer-macromol. ligand compns. as  
detection elements in ligand **assays**)

IT Antigens

Biopolymers

Enzymes

Haptens

Macromolecular compounds

Proteins, uses

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(**fluorescent** lipid polymer-macromol. ligand compns. as  
detection elements in ligand **assays**)

IT Plastics

RL: ARU (Analytical role, unclassified); ANST (Analytical study)

(**fluorescent** lipid polymer-macromol. ligand compns. as  
detection elements in ligand **assays**)

IT Immunoglobulins

RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST  
(Analytical study); PREP (Preparation); USES (Uses)

(G, conjugates, **fluorescent** lipid polymer-macromol. ligand

- compns. as detection elements in ligand **assays**)
- IT Albumins, preparation  
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
 (conjugates, with thyroxine; **fluorescent lipid polymer-macromol. ligand compns. as detection elements in ligand assays**)
- IT Spectrochemical analysis  
 (fluorometric, **fluorescent lipid polymer macromol. ligand compns. as detection elements in ligand assays**)
- IT 51-48-9, L-Thyroxine, analysis  
 RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study)  
 (**fluorescent lipid polymer-macromol. ligand compns. as detection elements in ligand assays**)
- IT 9001-78-9DP, antibody conjugates  
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
 (**fluorescent lipid polymer-macromol. ligand compns. as detection elements in ligand assays**)
- IT 79-41-4, analysis 27987-87-7, **Polydiacetylene**  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (**fluorescent lipid polymer-macromol. ligand compns. as detection elements in ligand assays**)
- IT 161865-61-8P  
 RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)  
 (**fluorescent lipid polymer-macromol. ligand compns. as detection elements in ligand assays**)
- IT 110-99-6, Diglycolic acid  
 RL: RCT (Reactant)  
 (**fluorescent lipid polymer-macromol. ligand compns. as detection elements in ligand assays**)
- IT 32180-11-3P, L-Thyroxine methyl ester 64486-49-3P 161865-59-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (**fluorescent lipid polymer-macromol. ligand compns. as detection elements in ligand assays**)

L26 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:192705 HCAPLUS

DOCUMENT NUMBER: 120:192705

TITLE: Surface effects on **polydiacetylene** conformations in solution by EWIFS

AUTHOR(S): Phillips, David; Rumbles, Garry; Brown, Alan J.

CORPORATE SOURCE: Dep. Chem., Imp. Coll., London, SW7 2AZ, UK

SOURCE: Polym. Prepr. (Am. Chem. Soc., Div. Polym. Chem.) (1992), 33(1), 845

CODEN: ACPPAY; ISSN: 0032-3934

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Evanescent wave-induced fluorescence spectroscopy (EWIFS) was used to study the mol. influence on the quality of polydiacetylene (poly-4BCMU) thin films used for optical waveguides. The emphasis was placed on the interfacial region between the polymer and the silica substrate.

CC 36-2 (Physical Properties of Synthetic High Polymers)  
 Section cross-reference(s): 37, 38, 73

ST **polydiacetylene** conformation silica surface **fluorescence**  
 ; optical waveguide **polydiacetylene** conformation **fluorescence**

IT Chains, chemical  
 (conformation of, of **polydiacetylene** on silica surfaces,

**fluorescence** study of, use for optical waveguides in relation to)

- IT **Fluorescence**  
(evanescent wave-induced, of **polydiacetylene** on silica surfaces, vol. conformation in relation to)
- IT Interface  
(**polydiacetylene**-silica, mol. orientation at, **fluorescence** study of)
- IT Waveguides  
(optical, **polydiacetylene** thin films for, mol. conformational effects in, **fluorescence** study of)
- IT Polyacetylenes, properties  
RL: PRP (Properties)  
(**polydiacetylenes**, conformation of, on silica **substrate**, evanescent wave-induced **fluorescence** spectroscopic study of, use for optical waveguides in relation to)
- IT 7631-86-9, Silica, properties  
RL: PRP (Properties)  
(conformation of **polydiacetylene** on surfaces of, **fluorescence** study of, use for optical waveguides in relation to)
- IT 68777-93-5, 4BCMU homopolymer 76135-61-0, 4BCMU homopolymer, SRU  
RL: PRP (Properties)  
(conformation of, on silica **substrate**, evanescent wave-induced **fluorescence** spectroscopic study of, use for optical waveguides in relation to)

L27 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:549159 HCAPLUS

DOCUMENT NUMBER: 136:107378

TITLE: A new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers  
AUTHOR(S): Evrard, Damien; Touitou, Elka; Kolusheva, Sofiya; Fishov, Yitzhak; Jelinek, Raz

CORPORATE SOURCE: Department of Chemistry and Stadler Minerva Center for Mesoscale Macromolecular Engineering, Ben Gurion University of the Negev, Beersheva, 84105, Israel  
SOURCE: Pharmaceutical Research (2001), 18(7), 943-949  
CODEN: PHREEB; ISSN: 0724-8741

PUBLISHER: Kluwer Academic/Plenum Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB This work aims to demonstrate a novel chem. assay for rapid screening and anal. of the mode of action of membrane interaction by penetration enhancers. The new bio-mimetic membrane assembly, consisting of supramol. aggregates of lipids and conjugated polydiacetylene, undergoes visible and quantifiable blue-red color transitions upon interaction with penetration enhancers. The new colorimetric model has been employed to examine various classes of penetration enhancers, including Azone, oleic acid, propylene glycol, menthol, Transcutol, Tween-20, and Diazepam. The assay enables to evaluate the validity of various observations and hypotheses proposed in previous studies regarding permeation enhancement activities. Our results suggest, for example, that propylene glycol (PG) by itself does not interfere with membranes, but rather exhibits synergistic effect in combination with other penetration enhancers. Similarly, our data demonstrate that Transcutol does not independently interact with membranes. The colorimetric system also indicates that interaction of



penetration enhancers with membranes depend upon the lipid phase, as well as the self-assembly properties of the enhancer mols. The new biomimetic model membrane system can be applied for rapid screening of the activities of penetration enhancers, and provides insight into the mechanisms of permeability of membrane-active compds.

CC 63-5 (Pharmaceuticals)

ST colorimetric **assay** membrane penetration enhancer

IT Colorimetry

Membrane, biological

Permeation enhancers

Self-association

Supramolecular structure

(new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers)

IT Ceramides

Lipids, biological studies

Polydiacetylenes

RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers)

IT Biological transport

(permeation, new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers)

IT 57-55-6, Propylene-glycol, properties 112-80-1, Oleic acid, properties 59227-89-3, Azone

RL: PRP (Properties)

(new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers)

IT 2644-64-6P, Dipalmitoylphosphatidylcholine 18656-38-7P, DMPC

RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers)

IT 75-89-8 111-90-0, Transcutol 439-14-5, Diazepam 1490-04-6, Menthol 9005-64-5, Tween-20 27987-87-7, Polydiacetylene

RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers)

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:91409 HCAPLUS

DOCUMENT NUMBER: 134:144212

TITLE: Doped colorimetric **assay** liposomes

INVENTOR(S): Charych, Deborah; Stevens, Raymond C.

PATENT ASSIGNEE(S): The Regents of the University of California, USA

SOURCE: U.S., 23 pp., Cont.-in-part of U.S. Ser. No. 389,475, abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 11

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6183772	B1	20010206	US 1996-609312	19960301

CA 2211972	AA	19960822	CA 1996-2211972	19960213
US 6306598	B1	20011023	US 1999-337973	19990621
US 2001026915	A1	20011004	US 2000-734410	20001211

PRIORITY APPLN. INFO.:

US 1995-389475	B2	19950213
US 1992-976697	A2	19921113
US 1993-159927	A2	19931130
US 1994-289384	B2	19940811
US 1994-328237	B2	19941024
US 1996-592724	A3	19960126
US 1996-609312	A2	19960301
US 1997-38383	P	19970214
US 1997-39749	P	19970303
US 1997-50496	P	19970623
US 1997-920501	A3	19970829
US 1997-944323	A2	19971006
US 1998-23898	A2	19980213
US 1998-33557	A2	19980302
US 1998-90266	P	19980622
US 1998-103344	A2	19980623
US 1999-337973	A2	19990621
US 1999-170190	P	19991210
US 1999-461509	A2	19991214
US 2000-500295	A2	20000208

- AB The present invention provides compns. comprising colorimetric assay liposomes. The present invention also provides methods for producing colorimetric liposomes and colorimetric liposome assay systems. In preferred embodiments, these colorimetric liposome systems provide high levels of sensitivity through the use of dopant mols. As these dopants allow the controlled destabilization of the liposome structure, upon exposure of the doped liposomes to analyte(s) of interest, the indicator color change is facilitated and more easily recognized. Thin film assemblies and liposomes were constructed for detection of cholera toxin and influenza virus. Sialic acid- or lactose-derivatized PDA, and PDA were used. The cholera toxin biosensor also had GM1 ganglioside. UV spectra were recorded.
- IC ICM A61K009-127  
ICS A61K049-00; G01N033-53; G01N033-544
- NCL 424450000
- CC 9-5 (Biochemical Methods)  
Section cross-reference(s): 4
- ST doped colorimetric liposome **assay**; cholera toxin biosensor; influenza virus sialic acid PDA liposome
- IT Cell adhesion molecules  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(ICAM-1 (intercellular adhesion mol. 1), as ligands in liposomes; doped colorimetric **assay** liposomes)
- IT Phosphatidylethanolamines, uses  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(N-biotinylated, as dopant; doped colorimetric **assay** liposomes)
- IT Receptors  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(PVR (poliovirus receptor), as ligands in liposomes; doped colorimetric **assay** liposomes)
- IT Alkynes  
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(alkadiynes, polymd., in liposomes; doped colorimetric **assay** liposomes)
- IT Buffers

Culture media  
 Physiological saline solutions  
 (as aq. soln. in liposome prepn.; doped colorimetric **assay** liposomes)

IT Phosphatidic acids  
 Polyoxyalkylenes, uses  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (as dopant; doped colorimetric **assay** liposomes)

IT Surfactants  
 (as dopants; doped colorimetric **assay** liposomes)

IT Cardiolipins  
 Ceramides  
 Cerebrosides  
 Lipids, uses  
 Lysophosphatidylcholines  
 Phosphatidic acids  
 Phosphatidylcholines, uses  
 Phosphatidylethanolamines, uses  
 Phosphatidylglycerols  
 Phosphatidylinositols  
 Phosphatidylserines  
 Sphingomyelins  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (as dopants; doped colorimetric **assay** liposomes)

IT Cholinergic receptors  
 Complement receptors  
 Trisaccharides  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (as ligands in liposomes; doped colorimetric **assay** liposomes)

IT Toxins  
 RL: ANT (Analyte); ANST (Analytical study)  
 (cholera; doped colorimetric **assay** liposomes)

IT Peptides, uses  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (detergents; as dopants; doped colorimetric **assay** liposomes)

IT Biosensors  
 Colorimetry  
 Dopants  
 Langmuir-Blodgett films  
 Liposomes  
 Spectrophotometry  
 (doped colorimetric **assay** liposomes)

IT Toxins  
 RL: ANT (Analyte); ANST (Analytical study)  
 (doped colorimetric **assay** liposomes)

IT Receptors  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (for polio virus, as ligands in liposomes; doped colorimetric **assay** liposomes)

IT Filtration  
 Solutions  
 (in liposome prepn.; doped colorimetric **assay** liposomes)

IT Ligands  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (in liposomes; doped colorimetric **assay** liposomes)

IT Polymerization  
 (of diyne monomers in liposome prepn.; doped colorimetric **assay** liposomes)

IT Affinity  
 (of ligands for analyte; doped colorimetric **assay** liposomes)

IT Solvents  
(org., in liposome prepn.; doped colorimetric **assay** liposomes)

IT Detergents  
(peptides, as dopants; doped colorimetric **assay** liposomes)

IT Physiological saline solutions  
(phosphate-buffered, as aq. soln. in liposome prepn.; doped colorimetric **assay** liposomes)

IT Sialic acids  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(reaction products with **diacetylene**, as dopants; doped colorimetric **assay** liposomes)

IT Influenza virus  
(sialic acid-derivatized **diacetylene** liposomes for detection of; doped colorimetric **assay** liposomes)

IT Glass, uses  
RL: DEV (Device component use); USES (Uses)  
(slides, in cholera toxin biosensor; doped colorimetric **assay** liposomes)

IT Oligosaccharides, uses  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(tetrasaccharides, as ligands in liposomes; doped colorimetric **assay** liposomes)

IT Detergents  
(zwitterionic, as dopants; doped colorimetric **assay** liposomes)

IT Adrenoceptors  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(.beta.-, as ligands in liposomes; doped colorimetric **assay** liposomes)

IT 77-86-1, Trizma 1132-61-2, 3-[N-Morpholino]propanesulfonic acid 7365-45-9, N-[2-Hydroxyethyl]piperazine-N'-(2-ethanesulfonic acid)  
RL: NUU (Other use, unclassified); USES (Uses)  
(as aq. soln. in liposome prepn.; doped colorimetric **assay** liposomes)

IT 57-88-5, Cholesterol, uses 83-44-3 123-78-4, D-Erythro-Sphingosine 151-21-3, Sodium dodecyl sulfate, uses 9005-63-4 9036-19-5, Octoxynol 25322-68-3, Polyethylene glycol 29557-51-5, Dodecyl phosphocholine 58846-77-8, Decylglucoside 75621-03-3, 3-[3-(Cholamidopropyl)dimethylammonio]-1-propanesulfonate  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(as dopant; doped colorimetric **assay** liposomes)

IT 63-42-3D, Lactose, reaction products with **diacetylene** 460-12-8D, **Diacetylene**, derivs.  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(as dopants; doped colorimetric **assay** liposomes)

IT 37758-47-7, Ganglioside GM1 59247-13-1, Ganglioside GT1b 62229-50-9, Epidermal growth factor  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(as ligand in liposomes; doped colorimetric **assay** liposomes)

IT 56-23-5, Carbon tetrachloride, uses 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 67-66-3, Chloroform, uses 71-43-2, Benzene, uses 75-05-8, Acetonitrile, uses 75-09-2, Methylene chloride, uses 110-54-3, Hexane, uses 110-82-7, Cyclohexane, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(as org. solvent in liposome prepn.; doped colorimetric **assay** liposomes)

IT 50930-22-8  
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)

- (as virus binding inhibitor; doped colorimetric **assay** liposomes)
- IT 324011-54-3 324011-55-4  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (doped colorimetric **assay** liposomes)
- IT 112-04-9, Octadecyltrichlorosilane  
 RL: DEV (Device component use); USES (Uses)  
 (glass slides coated with, in cholera toxin biosensor; doped colorimetric **assay** liposomes)
- IT 7782-44-7, Oxygen, processes  
 RL: REM (Removal or disposal); PROC (Process)  
 (in liposome prepn.; doped colorimetric **assay** liposomes)
- IT 66990-32-7, 10,12-Pentacosadiynoic acid 146064-05-3  
 RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)  
 (in liposomes and thin film assemblies for detection of influenza virus and cholera toxin; doped colorimetric **assay** liposomes)
- IT 174683-52-4  
 RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)  
 (in thin film assemblies for detection of cholera toxin; doped colorimetric **assay** liposomes)

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:842440 HCAPLUS

DOCUMENT NUMBER: 134:128054

TITLE: Peptide-Membrane Interactions Studied by a New Phospholipid/**Polydiacetylene** Colorimetric Vesicle **Assay**

AUTHOR(S): Kolusheva, Sofiya; Shahal, Tamar; Jelinek, Raz  
 CORPORATE SOURCE: Department of Chemistry and Stadler Minerva Center for Mesoscopic Macromolecular Engineering, Ben Gurion University of the Negev, Beersheva, 84105, Israel

SOURCE: Biochemistry (2000), 39(51), 15851-15859

CODEN: BICHAW; ISSN: 0006-2960

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Interactions between peptides and lipid membranes play major roles in numerous physiol. processes, such as signaling, cytolysis, formation of ion channels, and cellular recognition. We describe a new colorimetric technique for studying peptide-membrane interactions. The new assay is based on supramol. assemblies composed of phospholipids embedded in a matrix of polydiacetylene (PDA) mols. The phospholipid/PDA vesicle solns. undergo visible color changes upon binding of membrane peptides. Expts. utilizing various anal. techniques confirm that the blue-to-red color transitions of the phospholipid/PDA vesicles are directly related to adoption of helical conformations by the peptides and their assocn. with the lipids. Spectroscopic data indicate that the colorimetric transitions are correlated with important mol. parameters, such as the degree of penetration of the peptides into lipid bilayers, and the mechanisms of peptide-lipid binding. The results suggest that the new colorimetric assay could be utilized for studying interactions and organization of membrane peptides.

CC 9-5 (Biochemical Methods)

Section cross-reference(s): 6

ST peptide protein interaction membrane **polydiacetylene** colorimetry conformation

- IT Cholinergic receptors  
 RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); ANST (Analytical study); BIOL (Biological study); PROC (Process)  
 (M2 domain of .delta. subunit; peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle assay)
- IT Proteins, specific or class  
 RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); ANST (Analytical study); BIOL (Biological study); PROC (Process)  
 (membrane; peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle assay)
- IT Colorimetry  
 Membrane, biological  
 Micelles  
 Spectroscopy  
 Supramolecular structure  
 (peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle assay)
- IT Peptides, analysis  
 RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); ANST (Analytical study); BIOL (Biological study); PROC (Process)  
 (peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle assay)
- IT Phospholipids, analysis  
 Polydiacetylenes  
 RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
 (peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle assay)
- IT Conformation  
 (protein; peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle assay)
- IT 108433-95-0, Magainin II 118904-13-5 123168-46-7 133294-60-7  
 186316-60-9 321909-07-3 321909-08-4  
 RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); ANST (Analytical study); BIOL (Biological study); PROC (Process)  
 (peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle assay)
- IT 18194-24-6, DMPC 66990-31-6  
 RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
 (peptide-membrane interactions studied by a new phospholipid/**polydiacetylene** colorimetric vesicle assay)

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:568447 HCAPLUS

DOCUMENT NUMBER: 133:161564

TITLE: Polymer liposome assemblies containing polydiacetylenes and ligands for sensitive colorimetric assays of toxins

INVENTOR(S): Charych, Deborah

PATENT ASSIGNEE(S): The Regents of the University of California, USA

SOURCE: U.S., 23 pp., Cont.-in-part of U.S. Ser. No. 389,475,  
abandoned.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 11  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6103217	A	20000815	US 1997-901220	19970728
US 6080423	A	20000627	US 1997-944257	19971006

PRIORITY APPLN. INFO.:  
US 1994-289384 A2 19940811  
US 1994-328237 B2 19941024  
US 1995-389475 B2 19950213  
US 1996-22942 P 19960729

AB The presently claimed invention relates to polymeric assemblies which visibly change color in the presence of analyte. In particular, the presently claimed invention relates to liposomes comprising a plurality of lipid monomers, which comprises a polymerizable group, a hydrophilic head group and a hydrophobic tail group, and one or more ligands. Overall carbon chain length, and polymerizable group positioning on the monomer influence color change sensitivity to analyte concns.

IC ICM A61B049-00  
ICS A01N025-26; G01N033-545; G01N021-29

NCL 424009321

CC 9-1 (Biochemical Methods)

ST polymeric assembly liposome **polydiacetylene** colorimetry toxin

IT Toxins  
RL: ANT (Analyte); ANST (Analytical study)  
(cholera; polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Toxins  
RL: ANT (Analyte); ANST (Analytical study)  
(enterotoxins; polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Solvents  
(org.; polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Toxins  
RL: ANT (Analyte); ANST (Analytical study)  
(pertussis; polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Polymerization  
(photopolymer.; polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Bacteria (Eubacteria)  
Buffers  
Colorimetry  
Drugs  
Fungi  
Influenza virus  
Langmuir-Blodgett films  
Liposomes  
Molecular recognition  
Optical properties  
Virus  
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Enzymes, analysis

Receptors

Toxins

RL: ANT (Analyte); ANST (Analytical study)  
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Glycolipids

Glycoproteins, general, analysis

RL: ANT (Analyte); BOC (Biological occurrence); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence)  
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Agglutinins and Lectins

RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)  
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Ligands

RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)  
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Lipids, reactions

RL: DEV (Device component use); RCT (Reactant); USES (Uses)  
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Sialic acids

RL: DEV (Device component use); RCT (Reactant); USES (Uses)  
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Polydiacetylenes

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT Toxins

RL: ANT (Analyte); ANST (Analytical study)  
(toxin A; polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT 104443-62-1

RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)  
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

IT 7333-25-7, 10,12-Octadecadiynoic acid 66990-30-5, 10,12-Tricosadiynoic acid 66990-32-7, 10,12-Pentacosadiynoic acid 178560-65-1, 5,7-Docosadiynoic acid 182047-75-2, 5,7-Tetracosadiynoic acid

RL: DEV (Device component use); RCT (Reactant); USES (Uses)  
(polymeric liposome assemblies contg. polydiacetylenes and ligands for sensitive colorimetric **assays** of toxins)

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:425676 HCAPLUS

DOCUMENT NUMBER: 131:41778

TITLE: Colorimetric sensor employing **polydiacetylene** membrane

INVENTOR(S): Jo, Yoshio; Inoue, Toshiki; Takada, Kouichi

PATENT ASSIGNEE(S): Hoky Medical Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 11 pp.



CODEN: EPXXDW

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 926497	A2	19990630	EP 1998-310595	19981222
EP 926497	A3	20000614		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO

JP 11194130	A2	19990721	JP 1997-369574	19971226
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JP 3138442	B2	20010226		
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US 6277652	B1	20010821	US 1998-220389	19981223
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PRIORITY APPLN. INFO.:

JP 1997-369574 A 19971226

AB Disclosed is a colorimetric sensor comprising polydiacetylene membrane liposomes, a polydiacetylene membrane film or fine particles coated with a polydiacetylene membrane, in which the polydiacetylene membrane is incorporated with a protein having a reduced mol. wt. low enough not to cause color change in the polydiacetylene membrane. The examples of the reduced-mol.-wt. proteins include an antibody Fab' fragment, an antigenic protein of mol. wt. of 100,000 or less, and a peptide consisting of 3-20 amino acid residue, which undergo an antigen-antibody reaction with an antigen or antibody contained in a sample. As the reduced-mol.-wt. protein is also employed a combination of single-stranded DNA of 100 bases or less which hybridizes with single-stranded DNA contained in a sample to form a double-stranded DNA, and an antibody which reacts with said double-stranded DNA but does not react with the single-stranded DNA contained in the sample. A method for anal. of biosample is also disclosed, which comprises contacting the colorimetric sensor with a soln. sample and utilizing an absorption measurement or a visual observation with the naked eye to detect color change in the polydiacetylene membrane.

IC ICM G01N033-545

ICS G01N033-546; G01N033-563; C12Q001-68

CC 9-1 (Biochemical Methods)

ST colorimetric sensor **polydiacetylene** membrane

IT Colorimetry

Films

Immunoassay

Liposomes

Membranes, nonbiological

Nucleic acid hybridization

Particles

Sensors

(colorimetric sensor employing **polydiacetylene** membrane)

IT Amino acids, uses

Antibodies

Antigens

Peptides, uses

Proteins, general, uses

RL: ARG (Analytical reagent use); DEV (Device component use); ANST  
(Analytical study); USES (Uses)

(colorimetric sensor employing **polydiacetylene** membrane)

IT Polydiacetylenes

RL: DEV (Device component use); USES (Uses)

(colorimetric sensor employing **polydiacetylene** membrane)

IT Biosensors

(immunosensors; colorimetric sensor employing **polydiacetylene**  
membrane)

IT DNA  
 RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)  
 (single-stranded; colorimetric sensor employing **polydiacetylene** membrane)

L27 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1999:384965 HCAPLUS  
 DOCUMENT NUMBER: 131:184021  
 TITLE: Synthesis of Deuterated Volatile Lipid Degradation Products To Be Used as Internal Standards in Isotope Dilution **Assays**. 1. Aldehydes  
 AUTHOR(S): Lin, Jianming; Welti, Dieter H.; Vera, Francia Arce; Fay, Laurent B.; Blank, Imre  
 CORPORATE SOURCE: Nestle Research Center, Nestec Ltd., Lausanne, CH-1000, Switz.  
 SOURCE: J. Agric. Food Chem. (1999), 47(7), 2813-2821  
 CODEN: JAFCAU; ISSN: 0021-8561  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The isotopically labeled compds. [5,6-2H<sub>2</sub>]hexanal (d-I), [2,3-2H<sub>2</sub>]- (E)-2-nonenal (d-II), [3,4-2H<sub>2</sub>]- (E,E)-2,4-nonadienal (d-III), and [3,4-2H<sub>2</sub>]- (E,E)-2,4-decadienal (d-IV) were prep'd. in good yields using new or improved synthesis procedures. Labeling position, chem. purity, and isotopic distribution of the compds. were characterized by various MS and NMR techniques. These mols. are used as internal stds. in quantification expts. based on isotope diln. assay. Synthesis of d-I, d-III, and d-IV has not yet been reported in the literature.

CC 17-1 (Food and Feed Chemistry)  
 Section cross-reference(s): 23

IT Flavor  
 Flavoring materials  
 Food analysis  
 Isotope dilution mass spectrometry  
 Standard substances, analytical  
 (synthesis of deuterated volatile aldehydes as lipid degrdn. products to be used as internal stds. in isotope diln. **assays**)

IT 213595-54-1P 239440-84-7P, Hexanal-5,6-d<sub>2</sub> 239440-86-9P 239440-87-0P  
 RL: ARU (Analytical role, unclassified); FFD (Food or feed use); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (synthesis of deuterated volatile aldehydes as lipid degrdn. products to be used as internal stds. in isotope diln. **assays**)

IT 66-25-1, Hexanal 110-62-3, Pentanal 821-10-3, 1,4-Dichloro-2-butyne 821-41-0, 5-Hexen-1-ol 865-49-6 925-93-9, Ethanol-d 2463-53-8, 2-Nonenal 3685-19-6, (Z)-1-Methoxy-1-buten-3-yne 5910-87-2, (E,E)-2,4-Nonadienal 5921-73-3, 2-Nonyl-1-ol 25152-84-5, (E,E)-2,4-Decadienal  
 RL: RCT (Reactant)  
 (synthesis of deuterated volatile aldehydes as lipid degrdn. products to be used as internal stds. in isotope diln. **assays**)

IT 460-12-8P, 1,3-Butadiyne  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis of deuterated volatile aldehydes as lipid degrdn. products to be used as internal stds. in isotope diln. **assays**)

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:106056 HCAPLUS  
 DOCUMENT NUMBER: 128:164726  
 TITLE: Polymeric assemblies for sensitive colorimetric assays  
 INVENTOR(S): Charych, Deborah  
 PATENT ASSIGNEE(S): Regents of the University of California, USA  
 SOURCE: PCT Int. Appl., 70 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 11  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9804743	A1	19980205	WO 1997-US13253	19970728
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9738973	A1	19980220	AU 1997-38973	19970728
PRIORITY APPLN. INFO.: US 1996-22942 P 19960729 WO 1997-US13253 W 19970728				
AB	The present invention relates to a method for direct detection of analytes using color changes in liposomes which occur in response to selective binding to analytes to their surface. The placement and selection of the polymerizable group in the monomer utilized as a precursor in colorimetric film and liposome prodn. improves sensitivity and also provides a final color change reaction which is specific to an exact analyte concn.			
IC	ICM C12Q001-68			
CC	9-16 (Biochemical Methods)			
	Section cross-reference(s): 14			
ST	polymeric assembly colorimetric assay			
IT	Peptides, uses			
	RL: NUU (Other use, unclassified); USES (Uses) (Cell adhesion; polymeric assemblies for sensitive colorimetric assays)			
IT	Proteins (specific proteins and subclasses)			
	RL: ANT (Analyte); ANST (Analytical study) (GABA binding; polymeric assemblies for sensitive colorimetric assays)			
IT	Viral infection			
	(Newcastle disease; polymeric assemblies for sensitive colorimetric assays)			
IT	Receptors			
	RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (Transmembrane; polymeric assemblies for sensitive colorimetric assays)			
IT	Sialic acids			
	RL: NUU (Other use, unclassified); USES (Uses) (derivs.; polymeric assemblies for sensitive colorimetric assays)			
IT	Parotid gland			
	(diseases, mumps; polymeric assemblies for sensitive colorimetric assays)			
IT	Sexually transmitted diseases			

(gonorrhea; polymeric assemblies for sensitive colorimetric assays)

IT Alcohols, uses  
 Amines, uses  
 Carboxylic acids, uses  
 Esters, uses  
 Fluoro hydrocarbons  
 Hydrocarbons, uses  
 Phosphates, uses  
 Sulfates, uses  
 RL: ARG (Analytical reagent use); NUU (Other use, unclassified); ANST (Analytical study); USES (Uses)  
 (liposomes contg.; polymeric assemblies for sensitive colorimetric assays)

IT Salivary gland diseases  
 (mumps; polymeric assemblies for sensitive colorimetric assays)

IT Physiological=saline solutions  
 (phosphate-buffered; polymeric assemblies for sensitive colorimetric assays)

IT Bacillus anthracis  
 Bacteria (Eubacteria)  
 Buffers  
 Candida albicans  
 Cell (biological)  
 Chlamydia  
 Colorimetry  
 Electron beams  
 Encephalomyelitis  
 Escherichia coli  
 Gamma ray  
 Human herpesvirus 4  
 Human immunodeficiency virus  
 Human poliovirus  
 Influenza virus  
 Liposomes  
 Malaria  
 Meningitis  
 Molecular weight  
 Neutrophil  
 Organic solvents  
 Orthomyxoviridae  
 Paramyxoviridae  
 Pathogenic microorganism  
 Pharmaceutical analysis  
 Physiological saline solutions  
 Rabies  
 Reoviridae  
 Sendai virus  
 Streptococcus  
 UV radiation  
 Virus  
 X-ray  
 (polymeric assemblies for sensitive colorimetric assays)

IT 5-HT receptors  
 Cholera toxin  
 D2 receptor (dopamine)  
 Enterotoxins  
 Enzymes, analysis  
 Hormones (animal), analysis

IgG  
 Pertussis toxin  
 Proteins (general), analysis  
 Toxins  
 RL: ANT (Analyte); ANST (Analytical study)  
 (polymeric assemblies for sensitive colorimetric assays)  
 IT Complement receptors  
 .beta.-Adrenoceptors  
 RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL  
 (Biological study); USES (Uses)  
 (polymeric assemblies for sensitive colorimetric assays)  
 IT Antibodies  
 Catalytic antibodies  
 Monoclonal antibodies  
 Phospholipids, uses  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (polymeric assemblies for sensitive colorimetric assays)  
 IT Polymers, analysis  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (polymeric assemblies for sensitive colorimetric assays)  
 IT Alkenes, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (polymeric assemblies for sensitive colorimetric assays)  
 IT Alkynes  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (polymeric assemblies for sensitive colorimetric assays)  
 IT CD26 (antigen)  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (polymeric assemblies for sensitive colorimetric assays)  
 IT CD4 (antigen)  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (polymeric assemblies for sensitive colorimetric assays)  
 IT Imides  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (polymeric assemblies for sensitive colorimetric assays)  
 IT Ligands  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (polymeric assemblies for sensitive colorimetric assays)  
 IT Oligosaccharides, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (polymeric assemblies for sensitive colorimetric assays)  
 IT Polysiloxanes, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (polymeric assemblies for sensitive colorimetric assays)  
 IT Sialic acids  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (polymeric assemblies for sensitive colorimetric assays)  
 IT Oligosaccharides, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (tetrasaccharides; polymeric assemblies for sensitive colorimetric  
 assays)  
 IT Toxins  
 RL: ANT (Analyte); ANST (Analytical study)  
 (toxin A; polymeric assemblies for sensitive colorimetric  
 assays)  
 IT Encephalomyocarditis virus  
 (tx; polymeric assemblies for sensitive colorimetric assays)  
 IT Viral infection  
 (vaccinia; polymeric assemblies for sensitive colorimetric  
 assays)

- IT 59-23-4, D-Galactose, analysis 9001-84-7, Phospholipase a2  
RL: ANT (Analyte); ANST (Analytical study)  
(polymeric assemblies for sensitive colorimetric **assays**)
- IT 51-84-3, Acetylcholine, analysis  
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL  
(Biological study); USES (Uses)  
(polymeric assemblies for sensitive colorimetric **assays**)
- IT 50-67-9, Serotonin, uses 51-61-6, Dopamine, uses 56-12-2, Gaba, uses  
749-02-0, Spiperone 25550-58-7, Dinitrophenol 39324-30-6, Pepstatin  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(polymeric assemblies for sensitive colorimetric **assays**)
- IT 52-90-4, L-Cysteine, uses 56-40-6D, Glycine, liposomes contg.  
56-41-7D, L-Alanine, liposomes contg. 56-87-1D, L-Lysine, liposomes  
contg. 64-17-5D, Ethanol, liposomes contg. 65-85-0D, Benzoic acid,  
liposomes contg. 67-56-1D, Methanol, liposomes contg. 80-48-8D,  
liposomes contg. 93-58-3D, liposomes contg. 103-33-3D, Azobenzene,  
liposomes contg. 107-15-3D, 1,2-Ethanediamine, liposomes contg.  
112-30-1D, 1-Decanol, liposomes contg. 141-43-5D, liposomes contg.  
492-61-5D, .beta.-D-Glucopyranose, liposomes contg. 513-29-1D, Glycine  
sulfate, liposomes contg. 541-59-3D, 1H-Pyrrole-2,5-dione, liposomes  
contg. 563-24-6D, liposomes contg. 929-75-9 2603-10-3D, liposomes  
contg. 6066-82-6 6135-31-5D, liposomes contg. 6642-30-4D, liposomes  
contg. 7558-79-4D, Disodium phosphate, liposomes contg. 7632-05-5  
13940-21-1D, Mercapto, liposomes contg. 21291-99-6,  
1,2,3-Propanetriamine 28508-23-8D, liposomes contg. 33013-98-8D,  
liposomes contg. 112670-62-9D, liposomes contg. 132316-46-2  
202802-14-0D, liposomes contg. 202802-15-1D, liposomes contg.  
202802-16-2D, liposomes contg. 202802-17-3D, liposomes contg.  
202802-18-4 202802-19-5 202802-20-8 202802-21-9 202802-22-0  
202802-23-1 202802-24-2 202802-25-3 202802-26-4 202932-70-5D,  
liposomes contg.  
RL: ARG (Analytical reagent use); NUU (Other use, unclassified); ANST  
(Analytical study); USES (Uses)  
(polymeric assemblies for sensitive colorimetric **assays**)
- IT 56-23-5, Carbon tetrachloride, uses 62-53-3, Benzenamine, uses  
67-66-3, uses 71-43-2, Benzene, uses 75-05-8, Acetonitrile, uses  
75-09-2, Methylene chloride, uses 77-86-1, Trizma 109-97-7, Pyrrole  
110-02-1, Thiophene 110-54-3, Hexane, uses 110-82-7, Cyclohexane, uses  
**460-12-8, Diacetylene** 1132-61-2, Mops 7333-25-7,  
10,12-Octadecadiynoic acid 7365-45-9, Hepes 7732-18-5, Water, uses  
19295-34-2, Vinylpyridinium 37221-79-7, Vasoactive intestinal peptide  
62229-50-9, Epidermal growth factor 66990-30-5, 10,12-Tricosadiynoic  
acid 66990-32-7, 10,12-Pentacosadiynoic acid 104443-62-1, Ganglioside  
GM1 106362-32-7, Peptide t 106362-32-7D, Peptide t, derivs.  
178560-65-1, 5,7-Docosadiynoic acid 182047-75-2, 5,7-Tetracosadiynoic  
acid  
RL: NUU (Other use, unclassified); USES (Uses)  
(polymeric assemblies for sensitive colorimetric **assays**)

=> fil wpids

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DEL HIS Y

L1 723 S POLYDIACETYLENE# OR POLY DI ACETYLENE# OR POLYDI ACETYLENE# O  
L2 30085 S IMMUNOASSAY? OR ASSAY?  
L3 115641 S ?ARRAY?  
L4 5 S L1 AND L2  
L5 5 S L3 AND L1  
L6 9 S L4 OR L5  
L7 30 S L1 (6A) SUBSTRAT?  
L8 58242 S ?FLUORES?  
L9 1 S L7 AND L8  
L10 11489 S (DETECT? OR ANALYS? ) (5A) (ANALYTE? OR ANTIBOD? OR TOXIN# OR  
L11 10 S L1 AND L10  
L12 13 S L6 OR L9 OR L11  
L13 78540 S FLUORO?  
L14 11 S L13 AND L1  
L15 3 S L14 AND (L2 OR L3 OR SUBSTRAT? OR ANALYT? OR ANTIBOD? OR TOX  
L16 15 S L12 OR L15

FILE 'WPIDS' ENTERED AT 09:05:40 ON 14 MAR 2002

=> d .wp 1-15

L16 ANSWER 1 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD  
AN 2002-105080 [14] WPIDS  
CR 1996-393530 [39]; 1997-393702 [36]; 1998-457256 [39]; 1998-495982 [42];  
1999-204741 [17]; 2000-071650 [06]; 2000-147218 [11]; 2001-225814 [14];  
2002-089133 [70]  
DNN N2002-078117 DNC C2002-032204  
TI New composition, useful for **detecting** various **analytes**  
, comprises one or more biopolymeric materials consisting of several  
polymerized self-assembling lipid monomers and one or more nucleic acid  
ligands.  
DC A89 B04 D16 S03  
IN CHARYCH, D H; JONAS, U  
PA (REGC) UNIV CALIFORNIA  
CYC 1  
PI US 6306598 B1 20011023 (200214)\* 96p

ADT US 6306598 B1 CIP of US 1992-976697 19921113, CIP of US 1993-159927 19931130, CIP of US 1994-289384 19940811, CIP of US 1995-389475 19950213, Div ex US 1996-592724 19960126, CIP of US 1996-609312 19960301, CIP of US 1996-328237 19961024, Provisional US 1997-38383P 19970214, Provisional US 1997-39749P 19970303, Provisional US 1997-50496P 19970623, Div ex US 1997-920501 19970829, CIP of US 1997-944323 19971008, CIP of US 1998-23898 19980213, CIP of US 1998-33557 19980302, Provisional US 1998-90266P 19980622, CIP of US 1998-103344 19980623, US 1999-337973 19990621, CIP of US 1999-461509 19991214, CIP of US 2000-500295 20000208

FDT US 6306598 B1 Div ex US 6001556, Div ex US 6022748

PRAI US 2000-500295 20000208; US 1992-976697 19921113; US 1993-159927 19931130; US 1994-289384 19940811; US 1995-389475 19950213; US 1996-592724 19960126; US 1996-609312 19960301; US 1996-328237 19961024; US 1997-38383P 19970214; US 1997-39749P 19970303; US 1997-50496P 19970623; US 1997-920501 19970829; US 1997-944323 19971008; US 1998-23898 19980213; US 1998-33557 19980302; US 1998-90266P 19980622; US 1998-103344 19980623; US 1999-337973 19990621; US 1999-461509 19991214

AB US 6306598 B UPAB: 20020301

NOVELTY - A composition comprising one or more biopolymeric materials consisting of several polymerized self-assembling lipid monomers and one or more nucleic acid ligands, where the binding of an analyte to the nucleic acid ligand causes a conformational change in the polymerized self-assembling lipid monomers, resulting in a color change in the biopolymeric materials, is new.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a device comprising one or more of the biopolymeric materials immobilized on the device.

USE - The compositions and methods are useful for direct colorimetric detection of analytes using color changes that occur in biopolymeric material in response to selective binding of analytes. The biopolymeric materials may be used to detect a large variety of analytes including molecules, microorganisms, membrane receptors, membrane fragments, volatile organic compounds, enzymes, drugs, and antibodies.

Dwg.0/50

L16 ANSWER 2 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 2002-089133 [12] WPIDS

CR 1996-393530 [39]; 1997-393702 [36]; 1998-457256 [39]; 1998-495982 [42]; 1999-204741 [17]; 2000-071650 [06]; 2000-147218 [11]; 2001-225814 [14]; 2002-105080 [71]

DNN N2002-065665 DNC C2002-027360

TI New composition comprising a polymer molecule, a spacer molecule and a ligand is used for the direct detection of analytes has rapid response times, selectivity and optical signals that are easily monitored.

DC A89 A96 B04 D16 J04 P34 P73 S03

IN CHARYCH, D J; MYUNG-GI-BAEK,

PA (REGC) UNIV CALIFORNIA

CYC 1

PI US 2001026915 A1 20011004 (200212)\* 38p

ADT US 2001026915 A1 CIP of US 1992-976697 19921113, CIP of US 1993-159927 19931130, CIP of US 1994-289384 19940811, CIP of US 1994-328237 19941024, CIP of US 1995-389475 19950213, Div ex US 1995-389475 19950213, Div ex US 1996-592724 19960126, CIP of US 1996-609312 19960301, Provisional US 1997-38383P 19970214, Provisional US 1997-39749P 19970303, Provisional US 1997-50496P 19970623, Div ex US 1997-920501 19970829, CIP of US 1997-944323 19971006, CIP of US 1998-23898 19980213, CIP of US 1998-33557 19980302, Provisional US 1998-90266P 19980622, CIP of US 1998-103344



19980623, CIP of US 1999-337973 19990621, Provisional US 1999-170190P  
 19991210, CIP of US 1999-461509 19991214, CIP of US 2000-500295 20000208,  
 US 2000-734410 20001211  
 FDT US 2001026915 A1 Div ex US 6001556, Div ex US 6022748, CIP of US 6180135,  
 CIP of US 6183772  
 PRAI US 2000-734410 20001211; US 1992-976697 19921113; US 1993-159927  
 19931130; US 1994-289384 19940811; US 1994-328237 19941024; US  
 1995-389475 19950213; US 1996-592724 19960126; US 1996-609312  
 19960301; US 1997-38383P 19970214; US 1997-39749P 19970303; US  
 1997-50496P 19970623; US 1997-920501 19970829; US 1997-944323  
 19971006; US 1998-23898 19980213; US 1998-33557 19980302; US  
 1998-90266P 19980622; US 1998-103344 19980623; US 1999-337973  
 19990621; US 1999-170190P 19991210; US 1999-461509 19991214; US  
 2000-500295 20000208

AB US2001026915 A UPAB: 20020301

NOVELTY - A composition comprising a polymer molecule, selected from thiophene, polythiophene and glycopolythiophene, a spacer molecule, and a ligand, is new. The composition undergoes a color change when an analyte binds to the ligand.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) **detecting** the presence of an **analyte** comprising:

(a) providing the composition and a sample suspected of containing an analyte;

(b) contacting the polymer molecule with the sample; and

(c) detecting a color change caused by the binding of the analyte to the ligand; and

(2) a device comprising the biopolymeric composition.

USE - The composition is used for the direct **detection** of **analytes**.

ADVANTAGE - The materials used show rapid response times, selectivity and optical signals that are easily monitored.

DESCRIPTION OF DRAWING(S) - The drawing shows a schematic representation of a double-sandwiched biochromic sensory device based on mannose-PTs.

Dwg.11/13

L16 ANSWER 3 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 2001-648404 [74] WPIDS

DNN N2001-484493 DNC C2001-191336

TI **Detection of analytes** in a sample useful to **detect** chemical and biological species in air and solution uses a three-dimensional **array** of a **polydiacetylene** backbone with a **substrate** incorporated and monitors changes in **fluorescence**.

DC A12 A89 B04 D16 S03

IN REPPY, M A; SALLER, C F; SPORN, S A

PA (ANAL-N) ANALYTICAL BIOLOGICAL SERVICES INC

CYC 94

PI WO 2001071317 A1 20010927 (200174)\* EN 54p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
 NL OA PT SD SE SL SZ TR TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM  
 DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
 LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE  
 SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2001050883 A 20011003 (200210)

ADT WO 2001071317 A1 WO 2001-US8790 20010320; AU 2001050883 A AU 2001-50883  
 20010320

FDT AU 2001050883 A Based on WO 200171317

PRAI US 2000-190091P 20000320

AB WO 200171317 A UPAB: 20011217

NOVELTY - An **analyte** is **detected** in a sample by contacting with a three-dimensional **array** (e.g. liposomes) of a **polydiacetylene** backbone which has a **substrate** incorporated which has affinity for the **analyte**, can function as a binder to the **analyte** or can react with the **analyte**, and **detecting** a change in **fluorescence** of the **array**.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) **detecting** an **analyte** as above but using a two-dimensional **array** (i.e. a film) of a **polydiacetylene** backbone incorporating a **substrate**, in which up to 90 % (optionally up to 60 %) of **diacetylenes** are terminated with groups specifically binding the **analyte**; and

(2) **detecting** an **analyte** as claimed but in which **arrays** are suspended in solution and **analyte** is **detected** by **detecting** change in polarization of the **fluorescence** of **arrays** when excited with polarized light.

USE - The method is useful to detect chemical and biological species in air and solution e.g. small organic molecules, solvents, **toxins**, **enzymes**, peptides, bacteria and viruses etc., useful in drug discovery, medical diagnosis, food safety, pathogen detection, environmental monitoring etc.  
Dwg.0/5

L16 ANSWER 4 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 2001-225814 [23] WPIDS

CR 1996-393530 [39]; 1997-393702 [36]; 1998-457256 [39]; 1998-495982 [42]; 1999-204741 [17]; 2000-071650 [06]; 2000-147218 [11]; 2002-089133 [70]; 2002-105080 [71]

DNN N2001-160382 DNC C2001-067365

TI Doped liposomes that change color in the presence of an analyte comprise a polymerized diyne, one or more ligands having affinity for the analyte and a dopant having no affinity for the analyte.

DC A96 B04 B07 S03

IN CHARYCH, D; STEVENS, R C

PA (REGC) UNIV CALIFORNIA

CYC 1

PI US 6183772 B1 20010206 (200123)\* 23p

ADT US 6183772 B1 CIP of US 1995-389475 19950213, US 1996-609312 19960301

PRAI US 1996-609312 19960301; US 1995-389475 19950213

AB US 6183772 B UPAB: 20020301

NOVELTY - Composition comprising doped liposomes that change color in the presence of an analyte is claimed, where the doped liposomes comprise: (a) a polymerized diyne; (b) one or more ligands having affinity for the analyte; and (c) a dopant having no affinity for the analyte.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) production of such liposomes, comprising: combining a diyne monomer with the ligand(s) and dopant in an organic solvent; evaporating the solvent; adding an aqueous solution; heating the mixture above the main phase transition temperature of the monomer; agitating the mixture; cooling the mixture to at least 4 deg. C to form doped liposomes; and polymerizing the monomer; and

(2) Doped liposomes made by the above method.

USE - The composition is useful in colorimetric **assays**, e.g. for viruses, bacteria, parasites, drugs, hormones, cell wall fragments, membrane fragments, membrane receptors and enzymes.

Dwg.0/6

L16 ANSWER 5 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD  
 AN 2001-137749 [14] WPIDS  
 DNN N2001-100359 DNC C2001-040401  
 TI New charge neutral conjugated polymer e.g. polypyrrole with functional groups for binding biomolecule probe, useful as biosensor for conducting analysis of, or detecting biological substances e.g. DNA, RNA or polypeptides.  
 DC A26 A89 B04 D16 S03  
 IN CHOONG, V; LI, C; MARACAS, G; SHI, S  
 PA (MOTI) MOTOROLA INC  
 CYC 91  
 PI WO 2000077523 A1 20001221 (200114)\* EN 32p  
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
 NL OA PT SD SE SL SZ TZ UG ZW  
 W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES  
 FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS  
 LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL  
 TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
 AU 2000054757 A 20010102 (200121)  
 ADT WO 2000077523 A1 WO 2000-US15832 20000609; AU 2000054757 A AU 2000-54757 20000609  
 FDT AU 2000054757 A Based on WO 200077523  
 PRAI US 1999-138437P 19990610  
 AB WO 200077523 A UPAB: 20010312  
 NOVELTY - A charge neutral conjugated polymer having functional groups for binding a biomolecule probe, is new.  
 DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:  
 (1) an electrode in electrical communication with the charge neutral conjugated polymer;  
 (2) an **array** of electrodes;  
 (3) a biosensor devices for detecting biomolecules comprising (a) the electrode or (b) the **array** of electrodes, where (a) and (b) are in electrical communication with a matrix of charge neutral conjugated polymer having a functional group, and where the biomolecule probe is covalently linked to the functional group and a means for electrically detecting the binding of the biomolecule to the biomolecule probe;  
 (4) a method for determining an analyte in a test sample comprising:  
 (a) providing an electrode that is in electrical communication with a matrix of charge neutral conjugated polymer covalently linked to a binding group, which directly or indirectly binds to the analyte;  
 (b) contacting the matrix of charge neutral conjugated polymer with the test sample containing the analyte; and  
 (c) electrically **detecting** the **analyte** bound to the neutral conjugated polymer; and  
 (5) a method for preparing an analytical electrode comprising:  
 (A) electrochemically polymerizing pyrrole and a functionalized pyrrole to provide an oxidized polypyrrole functionalized pyrrole copolymer;  
 (B) electrically depositing the copolymer on an electrode;  
 (C) electrically reducing the copolymer to provide an electrically neutralized copolymer; and  
 (D) covalently linking a biomolecule probe that directly or indirectly binds an analyte to the functionalized pyrrole in the copolymer.  
 USE - The charge neutral conjugated polymer is useful as a biosensor for conducting analysis of or detecting biological substances such as DNA, RNA or polypeptides.

ADVANTAGE - Compared to prior art, the present invention makes use of a functionalized polymer or copolymer in its neutral state, instead of conductive state as the supporting matrix for biomolecule probe attachment or entrapment in a biomolecule detection device. The charge neutral functionalized polymer or copolymer has low electric background noise when used in electric detection of biomolecules. It also does not quench fluorescent signal when used in fluorescent detection of biomolecules. In both cases, the resulting devices have significantly improved signal to noise ratio, thus enhancing the sensitivity of biomolecule detection. Dwg.0/10

L16 ANSWER 6 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 2000-656038 [63] WPIDS

DNN N2000-486367 DNC C2000-198482

TI **Detecting analyte** which is non-reactive with lipids or polymer in a sample for distinguishing between a native peptide and its analog comprises causing a non-chemical change in a polymeric matrix that is detected by a color transition.

DC A96 B04 S03

IN JELINEK, R

PA (UYNE) UNIV BEN-GURION NEGEV

CYC 92

PI WO 2000055623 A2 20000921 (200063)\* EN 41p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL  
OA PT SD SE SL SZ TZ UG ZW

W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE  
ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR  
LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK  
SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2000031889 A 20001004 (200101)

EP 1161688 A2 20011212 (200204) EN

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI

ADT WO 2000055623 A2 WO 2000-IL158 20000314; AU 2000031889 A AU 2000-31889  
20000314; EP 1161688 A2 EP 2000-909610 20000314, WO 2000-IL158 20000314

FDT AU 2000031889 A Based on WO 200055623; EP 1161688 A2 Based on WO 200055623

PRAI IL 1999-129003 19990315

AB WO 200055623 A UPAB: 20001205

NOVELTY - **Detecting an analyte** (A) in a sample (S) involves introducing into (S) or into a polymeric matrix (PM) comprising lipids and a polymer (P) with an absorption band that may be shifted from a first to second wavelength in the visible region, a unit which enables (A) to cause a non-chemical change in PM, and then contacting (S) with PM and observing the color transition of PM.

DETAILED DESCRIPTION - **Detecting analyte** (A) which is non-reactive with lipids or polymer (P) in a sample (S) involves introducing into (S) or into a polymeric matrix (PM) comprising lipids and (P) with an absorption band that may be shifted from a first to second wavelength in the visible region, a unit which enables (A) to cause a non-chemical change in PM, and then contacting (S) with PM and observing the color transition of PM.

USE - The method is useful for distinguishing between a native peptide and its analog. The method is useful for distinguishing between a first analogue of a native peptide and a second analogue. The method is also useful for evaluating the biological activity of an analog of a native peptide (claimed). The colorimetric assay can be applied for rapid screening of anti-bacterial peptide activities, and could provide structural and functional information on peptide-membrane interactions and mechanisms of membrane permeability. Because of the direct relationships between the peptide sequences and color change of the

polymeric matrix, the method can be used in biopharmaceutical applications and biochemical research-and-development. Among the potential applications are:

- (1) high-throughout screening of antibiotic peptides libraries;
- (2) diagnostic kits for antibiotic peptides;
- (3) development of anti-microbial drugs which induce membrane perturbations lysis; and
- (4) elucidating the factors affecting peptide-membrane interactions.

ADVANTAGE - The presence of several cations in the tested sample does not diminish the sensitivity of the detection method. The detection method is sensitive to the amino acid sequence of the peptides. The color induced in the solutions containing the polymeric matrix occur within seconds after addition of the peptides. The speed of the **assay**, combined with the simplicity of detection, would be an important advantage over conventional anti-bacterial **assays**, which require, in general, much longer times to carry out. The **assay** is robust and can be easily expanded to include a variety of membrane models.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic representation of the polymeric matrix.

Dwg.1/12

L16 ANSWER 7 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD  
 AN 2000-303848 [26] WPIDS  
 DNN N2000-226966 DNC C2000-092358  
 TI **Toxin** contamination **detector** for **detecting** contaminants in packaged foodstuffs comprises bar code printed on substrate, and a toxin indicator.  
 DC A89 D13 D15 D16 J04 S03  
 IN CAMACHO, V S; LENTINI, D P  
 PA (CAMA-I) CAMACHO V S; (LENT-I) LENTINI D P; (VERS-N) VERSEAU GROUP  
 CYC 35  
 PI WO 2000020863 A1 20000413 (200026)\* EN 28p  
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL  
 OA PT SD SE SL SZ TZ UG ZW  
 W: CN IN JP  
 EP 1119771 A1 20010801 (200144) EN  
 R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE  
 ADT WO 2000020863 A1 WO 1999-US23318 19991006; EP 1119771 A1 EP 1999-951821 19991006, WO 1999-US23318 19991006  
 FDT EP 1119771 A1 Based on WO 200020863  
 PRAI US 1999-130092P 19990420; US 1998-103434P 19981006  
 AB WO 200020863 A UPAB: 20000531

NOVELTY - The **toxin** contamination **detector** comprises a substrate, a bar code (110) printed on the substrate having a first color to reflect light from a bar code scanning device to produce a bar code result, and a toxin indicator having a second color in the absence of a toxin which does not alter the bar code result, and a third color that changes the bar code result to indicate the presence of toxins.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (a) a method for identifying toxin contamination;
- (b) a system for identifying a toxin contaminant comprising a container (100) including **toxin** contamination **detector** as above, a scanner for scanning the detector, and a processor for processing signals from the detector to decode the bar code information; and
- (c) a water purifier comprising an inlet for receiving water having one or more impurities, a purifier for removing at least a portion of the impurities, and a colorimetric **detector** comprising the above **toxin detector** for identifying the presence of the

impurities.

USE - For detecting contaminants in a packaged foodstuff.

ADVANTAGE - The detector is accurate, easy to produce and highly scalable. It can be readily perceived at various check points in the distribution chain and at the point of sale.

DESCRIPTION OF DRAWING(S) - The figure shows a bottom view of a packaged foodstuff.

Container 100

Bar code 110

Dwg.1B/7

L16 ANSWER 8 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD  
 AN 2000-147218 [13] WPIDS  
 CR 1996-393530 [39]; 1997-393702 [36]; 1998-457256 [39]; 1998-495982 [42];  
 1999-204741 [17]; 2000-071650 [06]; 2001-225814 [14]; 2002-089133 [70];  
 2002-105080 [71]  
 DNN N2000-417837 DNC C2000-168574  
 TI Biopolymeric composition for detecting analytes e.g. pathogens, proteins or enzymes, comprises biopolymeric material that changes color in presence of analyte.  
 DC A96 B04 D16 S03  
 IN CHARYCH, D H; JONAS, U  
 PA (REGC) UNIV CALIFORNIA  
 CYC 22  
 PI WO 9967423 A1 19991229 (200013)\* EN 175p  
 RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
 W: AU CA JP  
 AU 9947047 A 20000110 (200025)  
 EP 1112377 A1 20010704 (200138) EN  
 R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE  
 ADT WO 9967423 A1 WO 1999-US14029 19990622; AU 9947047 A AU 1999-47047  
 19990622; EP 1112377 A1 EP 1999-930522 19990622, WO 1999-US14029 19990622  
 FDT AU 9947047 A Based on WO 9967423; EP 1112377 A1 Based on WO 9967423  
 PRAI US 1999-90266 19990621; US 1998-90266P 19980622  
 AB WO 9967423 A UPAB: 20020301

NOVELTY - Composition (A) comprising biopolymeric material (I) that changes color in presence of an analyte (II). (I) consists of many polymerized self-assembling monomers (III) and at least one nucleic acid ligand (IV).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) a device containing at least one immobilized (I), and
- (2) method for detecting (II) from its ability to cause a color change in (I).

USE - The method is used to detect nucleic acids, enzymes, pathogens (especially viruses, bacteria, parasites or fungi), drugs, receptor ligands, antigens, ions, proteins, hormones, blood components, antibodies or lectins, e.g. for diagnosis of pathogens or genetic diseases, but also more generally organic solvents (e.g. in pharmaceutical products, air or water samples) or other small organic molecules. It can also be used to identify enzyme inhibitors; to screen enzymes or other catalytic molecules for activity and in drug development (by detecting competitive inhibition of a natural binding event).

ADVANTAGE - (II) can be detected directly and rapidly, either with the naked eye (e.g. for home use) or instrumentally. The method can be made quantitative; is easily adapted to high throughput screening and vesicles based on (I) have excellent storage stability.  
 Dwg.0/50

L16 ANSWER 9 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 2000-071650 [06] WPIDS  
 CR 1996-393530 [39]; 1997-393702 [36]; 1998-457256 [39]; 1998-495982 [42];  
 1999-204741 [17]; 2000-147218 [11]; 2001-225814 [14]; 2002-089133 [70];  
 2002-105080 [71]  
 DNC C2000-020448  
 TI Polymeric **assay** film for direct colorimetric detection of small  
 molecules such as pathogens.  
 DC A89 B04 D16 J04  
 IN CHARYCH, D; NAGY, J; SPEVAK, W  
 PA (REGC) UNIV CALIFORNIA  
 CYC 1  
 PI US 6001556 A 19991214 (200006)\* 20p  
 ADT US 6001556 A CIP of US 1992-976697 19921113, CIP of US 1992-982189  
 19921125, Cont of US 1993-159927 19931130, US 1996-592724 19960126  
 PRAI US 1993-159927 19931130; US 1992-976697 19921113; US 1992-982189  
 19921125; US 1996-592724 19960126  
 AB US 6001556 A UPAB: 20020301  
 NOVELTY - Polymeric **assay** films for direct colorimetric  
 detection tests of small molecules, are new.  
 DETAILED DESCRIPTION - A polymerized bilayer film (I) comprises:  
 (1) a conjugated polymer backbone (comprising a number of polymerized  
**diacetylene** monomers);  
 (2) linker groups (which are covalently conjugated to the polymer  
 backbone);  
 (3) ligands (either sialic acid and/or carbohydrates with ordering  
 heads groups covalently conjugated to the linker groups) with direct  
 affinity for an analyte; and  
 (4) a support structure.  
 The ordering head groups are bound to the surface of the conjugated  
 polymer backbone in positions not occupied by the linker groups. The  
 polymerized bilayer film undergoes a detectable color change upon binding  
 of the analyte to the ligands.  
 INDEPENDENT CLAIMS are also included for the following:  
 (1) a method (II) of producing (I), comprising:  
 (a) providing:  
 (i) ligands (carbohydrates) with a direct affinity for an analyte;  
 (ii) linker groups with 2 terminal ends;  
 (iii) lipid monomers;  
 (iv) lipid monomers comprising ordering head groups; and  
 (v) a support surface;  
 (b) attaching the ligands to the lipid monomers so that the ligands  
 are attached to one end of the linkers and the lipid monomers are attached  
 to the other (to produce monomer-linear structural unit-ligand groups);  
 (c) mixing the monomer-linear structural unit-ligand groups with  
 lipid monomers comprising ordering heads;  
 (d) spreading the mixture from step (c) on the support to form a  
 bilayer film; and  
 (e) polymerizing the bilayer film (to form the polymerized bilayer  
 film (I)); and  
 (2) a method for **detecting** an **analyte**, comprising  
 contacting (I) with a sample thought to contain the **analyte** and  
**detecting** a color change in (I) (a color change is indicative of  
 the presence of the analyte).  
 USE - (I) may be used for the direct detection of small molecules  
 such as pathogens (e.g. influenza viruses, herpes virus, human  
 immunodeficiency virus (HIV), coronavirus, encephalomyelitis, chlamydia,  
 rotavirus, polyomavirus, Streptococcus, Salmonella, sendai virus, mumps  
 virus, Newcastle Disease virus, myxovirus, Escherichia coli,  
 encephalomyocarditis virus and Plasmodium (claimed)). Other substances  
 such as industrial materials, enzymes, hormones, cell wall fragments,

blood components, disease indicators, cell components, antibodies, lectins and genetic material may also be detected using (I).

(I) also has application in feedstock and effluent monitoring, drug development and other types of medical testing.

ADVANTAGE - The use of (I) is easily automated, especially if a spectrometer is used to detect color changes. A multiple well system may be produced from (I) which allows inexpensive screening and sequential testing for analytes. (I) represents a new approach to the direct detection of a material using color changes in a monomolecular film which occurs when specifically bound to the target molecule. (I) is simple and inexpensive to produce.

(I) provides the advantages of both an **immunoassay** and chemical analysis in a single system. It has the inherent direct **assay** advantages of analytical chemistry methods and has a substantial environmental range of testing beyond that of **immunoassays**. This allows accommodation of various analytes in their most advantageous environmental parameters. Additionally, (I) allows rigorous direct analysis to occur even in very narrow environmental ranges, previously unavailable with analytical chemical techniques. The speed and simplicity of the color change indicator of (I) are its hallmark advantages.

Dwg.0/6

L16 ANSWER 10 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD  
 AN 2000-023184 [02] WPIDS  
 DNN N2000-017268 DNC C2000-005605  
 TI Material deposition method for forming multicolored pixelate **array**  
 of organic electroluminescent material on substrate.  
 DC A89 B04 D16 G06 J04 L03 P74 P84 U14  
 IN DUFFY, D C; JACKMAN, R J; JENSEN, K F; VAETH, K M; WHITESIDES, G M  
 PA (HARD) HARVARD COLLEGE; (MASI) MASSACHUSETTS INST TECHNOLOGY  
 CYC 22  
 PI WO 9954786 A1 19991028 (200002)\* EN 65p  
 RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
 W: CA JP US  
 EP 1080394 A1 20010307 (200114) EN  
 R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE  
 ADT WO 9954786 A1 WO 1999-US8623 19990420; EP 1080394 A1 EP 1999-918698  
 19990420, WO 1999-US8623 19990420  
 FDT EP 1080394 A1 Based on WO 9954786  
 PRAI US 1998-63742 19980421  
 AB WO 9954786 A UPAB: 20000112

NOVELTY - A mask (30) shields predetermined portion of the surface of the substrate (72). An agent is applied through the channel of the mask to unshielded portion of the substrate while preventing application of the agent to the predetermined portion. The dimension of the channel is less than 1 mm.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for mask.

USE - For forming multicolored pixelate **array** of organic electroluminescent material on substrate for flat panel display.

ADVANTAGE - Provides high resolution optical device that can be multicolor and can display electroluminescence. Forms seal against substrate surface in the absence of any clamping apparatus. Avoids use of solvent during fabrication and does not require encapsulation of pixels between formation steps.

DESCRIPTION OF DRAWING(S) - The figure shows the formation of **array** of different materials on surface using multiple masks.

Mask 30

Substrate 72



Dwg.7/18

L16 ANSWER 11 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD  
 AN 1999-510416 [43] WPIDS  
 DNN N1999-380529 DNC C1999-149301  
 TI Method for producing an aligned chemically adsorbed monomolecular film for antifouling, liquid crystal alignment and polarization films.  
 DC A26 A32 A85 A89 L03 P42 P81 U14  
 IN NOMURA, T; OGAWA, K; OOTAKE, T  
 PA (MATU) MATSUSHITA ELECTRIC IND CO LTD; (MATU) MATSUSHITA DENKI SANGYO KK  
 CYC 29  
 PI EP 942314 A2 19990915 (199943)\* EN 25p

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
 RO SE SI

JP 11253873 A 19990921 (199950) 7p  
 JP 11258611 A 19990924 (199951) 11p  
 CN 1228543 A 19990915 (200001)  
 US 6054190 A 20000425 (200027)  
 KR 99077795 A 19991025 (200052)

ADT EP 942314 A2 EP 1999-103984 19990311; JP 11253873 A JP 1998-60202  
 19980311; JP 11258611 A JP 1998-60203 19980311; CN 1228543 A CN  
 1999-103654 19990311; US 6054190 A US 1999-264590 19990308; KR 99077795 A  
 KR 1999-8141 19990311

PRAI JP 1998-60203 19980311; JP 1998-60202 19980311

AB EP 942314 A UPAB: 19991020

NOVELTY - A method for producing an aligned chemically adsorbed monomolecular film is a two step process of:

(1) formation of a monomolecular film by chemisorption on a hydrophilic surface of a base material by contact of the base material with a silane-based surfactant having a carbon chain or a siloxane bond chain so as to cause a chemical reaction, thereby bonding one end of the surfactant molecule to the hydrophilic surface and

(2) orientation of the base material with the monomolecular film in a predetermined orientation vapor washing the oriented base material with an organic solvent vapor and performing a first alignment of the surfactant molecules constituting the film by flow of condensation of the vapor on the film.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(i) a process for producing a liquid crystal alignment film where the base material is a substrate provided with electrodes

(ii) a method for producing a liquid crystal display apparatus having the base material provided with an electrode group arranged in a matrix array and including a process of facing the surface having the electrode group with mother substrate at a predetermined interval and injecting a liquid crystal composition between the substrates.

USE - The method is useful for the production of aligned chemically adsorbed monomolecular films for use as antifouling film, liquid crystal alignment film, polarization film, phase retardation film or conductive film.

ADVANTAGE - The process allows high efficiency utilisation of the washing solution, excellent alignment of the film and preparation of multi-domain liquid crystal displays.

DESCRIPTION OF DRAWING(S) - The drawing is a cross-sectional view of a vapor washing process.

substrate 1

bath 3

solvent 4

condensed solvent 41

direction of flow 7

Dwg.2/9

L16 ANSWER 12 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD  
 AN 1999-359759 [31] WPIDS  
 DNN N1999-267977 DNC C1999-106632  
 TI New colorimetric sensor comprising **polydiacetylene** membrane, useful for **detecting** nucleic acids, **antibodies** and other naturally occurring ligands.  
 DC A96 B04 D16 J04 S03  
 IN INOUE, T; JO, Y; TAKADA, K  
 PA (HOGY-N) HOGY MEDICAL CO LTD  
 CYC 27  
 PI EP 926497 A2 19990630 (199931)\* EN 11p  
 R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
 RO SE SI  
 JP 11194130 A 19990721 (199939) 8p  
 JP 3138442 B2 20010226 (200114) 8p  
 US 6277652 B1 20010821 (200150)  
 ADT EP 926497 A2 EP 1998-310595 19981222; JP 11194130 A JP 1997-369574 19971226; JP 3138442 B2 JP 1997-369574 19971226; US 6277652 B1 US 1998-220389 19981223  
 FDT JP 3138442 B2 Previous Publ. JP 11194130  
 PRAI JP 1997-369574 19971226  
 AB EP 926497 A UPAB: 19991004  
 NOVELTY - The new colorimetric sensor comprises **polydiacetylene** membrane liposomes, a **polydiacetylene** film or fine particles coated with a **polydiacetylene** membrane, incorporating a protein having a reduced molecular weight low enough to cause a color change in the **polydiacetylene** membrane.  
 DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for analysis of a biosample comprising, contacting the colorimetric sensor (as above) with a solution sample and utilizing an absorption measurement or a visual observation with the naked eye to detect color change in the **polydiacetylene** membrane.  
 USE - The colorimetric sensor is useful for analyzing different ligands (**analytes**) in biosamples e.g. **detection** of nucleic acids by a nucleic acid/antibody combination and all naturally occurring ligands.  
 ADVANTAGE - Biosamples are analyzed in a highly sensitive manner and the preparation of the membrane is facilitated. The sensor can be widely used for detecting ligands, especially those that cannot be detected by the prior art.  
 Dwg.0/4

L16 ANSWER 13 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD  
 AN 1998-506531 [43] WPIDS  
 CR 2001-136388 [04]  
 DNN N1998-394846 DNC C1998-152890  
 TI Surface modifying agents, useful for non-stick, non-wetting, friction reduction and corrosion inhibition - comprising aromatic, cis, trans-tetra-substituted ethene and **di acetylene** crosslinkable compounds, useful on metallic, non-metallic, organic, inorganic, ceramic, ceramic fibre, organic fibre and inorganic fibre surfaces.  
 DC E19 G02 L02 M13 M14 P42  
 IN GARG, N; GRAUPE, M; LEE, T R; SHON, Y  
 PA (UYHO-N) UNIV HOUSTON  
 CYC 80  
 PI WO 9840169 A1 19980917 (199843)\* EN 87p  
 RW: AT BE CH DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA  
 PT SD SE SZ UG ZW

W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE  
 GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG  
 MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG  
 UZ VN YU ZW

AU 9867009 A 19980929 (199906)  
 ADT WO 9840169 A1 WO 1998-US4897 19980311; AU 9867009 A AU 1998-67009 19980311  
 FDT AU 9867009 A Based on WO 9840169  
 PRAI US 1997-818334 19970314  
 AB WO 9840169 A UPAB: 20010312

Compositions comprising a surface modifying agent of formula (Rf) alpha-X-(Q) beta (VIII) in which Rf = **fluoro**-carbon containing group;  
 X = CH<sub>2</sub>CH<sub>2</sub>, R'' or R'''; R'' = tetravalent atom, double bond or ring system; R''' = crosslinkable group chosen from acetylenic, diacetylenic, polyacetylenic, alpha amino acid, alpha hydroxy acid or dialkoxysilylenyl; Q = (R)ii(E)jjZ; R and R' = carbon-containing group; E = NR', O, PR' or S; R' = a carbon-containing group; Z = hydrogen or CGG'; G = NR<sub>2</sub>, O, PR<sub>2</sub> or S; G' = R<sub>2</sub>, NR<sub>22</sub>, OR<sub>2</sub>, PR<sub>22</sub>, or SR<sub>2</sub>; and R<sub>2</sub> = hydrogen or a carbon-containing group; ii and jj = 0-1; alpha and beta = integers the sum of which is not greater than the maximum number of substituents X can accommodate.

Also claimed is a composition comprising: (i) a **substrate**; and (ii) a partial or complete monolayer coating of a surface modifying agent of formula (VIII).

USE - The compounds have fluorinated tail groups and surface reactive head groups; and are used to provide a partial or complete monolayer surface coatings on **substrates** (claimed). The surface modifying compounds can be used for any non-stick, non-wetting or corrosion inhibiting application, and/or friction reducing application. Suitable surfaces include metallic (e.g. gold, in examples), non-metallic, e.g. organic, inorganic, ceramic, ceramic fibre, organic fibre or inorganic fibre surfaces.

ADVANTAGE - Preparation of the surface modifying agents is low cost, highly effective and efficient. The surface can be patterned with one or more of the surface modifying agents by applying a mask to the surface, treating the exposed surface with a first agent, unmasking the masked surface and treating the untreated, exposed surface with a second agent, to generate surfaces with complex patterns of agents.

Dwg.5/9

L16 ANSWER 14 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD  
 AN 1995-066987 [09] WPIDS  
 DNN N1995-053165 DNC C1995-029634  
 TI Fluorescent lipid polymer-macromolecular ligand compsns. - used as detection element in ligand pref. haptenic or antigenic, as **assays**

DC A96 B04 S03  
 IN DER-BALAIN, G; JOHNSON, S; KENHEY, P; MATHIS, H; RIBI, H; SAUL, T; WITTY, T; DER-BALIAN, G; KENNEY, P  
 PA (BIOC-N) BIOCIRCUITS CORP  
 CYC 20

PI WO 9502183 A1 19950119 (199509)\* EN 24p  
 RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE  
 W: CA JP  
 US 5415999 A 19950516 (199525) 8p  
 EP 660931 A1 19950705 (199531) EN  
 R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE  
 JP 08501883 W 19960227 (199643) 26p  
 US 5618735 A 19970408 (199720) 6p  
 EP 660931 A4 19970528 (199746)

ADT WO 9502183 A1 WO 1994-US7636 19940707; US 5415999 A US 1993-89975

19930709; EP 660931 A1 EP 1994-921490 19940707, WO 1994-US7636 19940707;  
JP 08501883 W WO 1994-US7636 19940707, JP 1995-504162 19940707; US 5618735  
A Div ex US 1993-89975 19930709, US 1995-405549 19950316; EP 660931 A4 EP  
1994-921490

FDT EP 660931 A1 Based on WO 9502183; JP 08501883 W Based on WO 9502183; US  
5618735 A Div ex US 5415999

PRAI US 1993-89975 19930709; US 1995-405549 19950316

AB WO 9502183 A UPAB: 19950306

The following are claimed: (A) a fluorescent layer (I) comprising: (a) a  
polymerised **polydiacetylene** lipid layer (II); and (b) a  
macromolecular ligand (ML) non-covalently associated with the lipid layer,  
where the ML has 1 binding site which binds to a complementary member;  
upon binding of a fluorescent quencher to the member, the fluorescence of  
the lipid layer is diminished; (B) a fluorescent layer comprising: (a) a  
solid support; (b) a macromolecular proteinaceous ligand adsorbed onto the  
solid support; and (c) a (II) layered onto the ML or opt. (b') a (II)  
adsorbed onto the solid support; and (c') ML covering the (II); (C)

~~detecting the presence of analyte in a sample using~~  
fluorescence as a measurement and employing a conjugate which modulates  
the fluorescence of a fluorescer in relation to the amt. of analyte in the  
sample using the fluorescer as in (A); (D) a kit comprising: (a) (I); (b)  
a conjugate of an enzyme and a member of a specific binding pair; and (c)  
an enzyme substrate of the enzyme resulting in a prod. capable of  
modulating the fluorescence of the fluorescent layer.

USE - The method enables the detection of molecules by the use of  
fluorescent materials in association with materials capable of binding to  
a substance to form a specific binding pair. Any analyte can be determined  
by the method. Ligands can be haptenic or antigenic, single molecules,  
polysubunit molecules or aggregations e.g. microsomes, cells or virus  
particles. The ligands include venous drugs e.g. drugs of abuse,  
therapeutic drugs or toxins. The analytes may include surface membrane  
proteins, e.g. HLA proteins, mutant proteins, lipopolysaccharides, peptide  
drugs, cancer markers, viral proteins, cyclodextrins, placental antigens,  
ferritin, enzymes, interferon and cytoplasmic proteins. Other ligands of  
interest include hormones such as thyroxine, triiodothyronine, growth  
hormone, steroids, vitamins and cofactors.

Dwg.0/0

L16 ANSWER 15 OF 15 WPIDS COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1985-216694 [35] WPIDS

DNC C1985-094411

TI Coating polymeric mono(pentafluoro sulphur) **di acetylene**  
- to alter surface properties of **substrate**.

DC A12 A32 L01 M13

IN DEMARCO, R A; KOVACINA, T A; SNOW, A W

PA (USNA) US SEC OF NAVY

CYC 1

PI US 4535011 A 19850813 (198535)\* 4p

ADT US 4535011 A US 1983-562251 19831216

PRAI US 1983-562251 19831216

AB US 4535011 A UPAB: 19930925

Polymeric mono(pentafluoro sulphur)**diacetylene** (I) is coated by  
maintaining mono(pentafluorosulphur) **diacetylene** (II) at from  
-20 to 30 deg.C as a gas which is then contacted with a surface until  
sufficient (II) has polymerised on it. The novel cpd. (II) is maintained  
as a gas at 0-20 deg.C.

USE - (I) is esp. important as a protective coating and due to the  
stability of (II) as a result of the SF5 gp., it can be used to alter the  
surface properties of a wide range of materials, e.g. glass is passivated  
w.r.t. fluorine.

Tran 09/811,538

0/0

=> fil biosis

FILE 'BIOSIS' ENTERED AT 09:09:52 ON 14 MAR 2002  
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RECORDS LAST ADDED: 13 March 2002 (20020313/ED)

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(FILE 'BIOSIS' ENTERED AT 09:06:07 ON 14 MAR 2002)  
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FILE 'REGISTRY' ENTERED AT 09:06:14 ON 14 MAR 2002  
E POLYDIACETYLENE/CN

L1 1 S E3  
E DIACETYLENE/CN  
L2 2 S E3 OR E10

FILE 'BIOSIS' ENTERED AT 09:06:36 ON 14 MAR 2002

L3 37 S L1 OR L2  
L4 111 S POLYDIACETYLENE# OR POLY DI ACETYLENE# OR POLYDI ACETYLENE# O  
L5 522248 S ?ARRAY? OR ?ASSAY?  
L6 4 S L4 AND L5  
L7 99347 S FLUROES? OR FLUORO?  
L8 286481 S L7 OR FLUORES?  
L9 7 S L4 AND L8  
L10 91464 S (ANALYTE# OR ANTIBOD? OR TOXIN# OR ENZYM?) (5A) (DETECT? OR A  
L11 2 S L4 AND L10  
L12 13 S L11 OR L9 OR L6

FILE 'BIOSIS' ENTERED AT 09:09:52 ON 14 MAR 2002

=> d bib ab it 1-14

L12 ANSWER 1 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
AN 2002:6333 BIOSIS  
DN PREV200200006333  
TI Nucleic acid-coupled colorimetric **analyte detectors**.  
AU Charych, Deborah H.; Jonas, Ulrich (1)  
CS (1) Mainz Germany  
ASSIGNEE: Regents of the University of California  
PI US 6306598 October 23, 2001  
SO Official Gazette of the United States Patent and Trademark Office Patents,  
(Oct. 23, 2001) Vol. 1251, No. 4, pp. No Pagination. e-file.  
ISSN: 0098-1133.  
DT Patent  
LA English  
AB The present invention relates to methods and compositions for the direct  
**detection of analytes** and membrane conformational  
changes through the detection of color changes in biopolymeric materials.  
In particular, the present invention provide for the direct colorimetric  
**detection of analytes** using nucleic acid ligands at  
surfaces of **polydiacetylene** liposomes and related molecular  
layer systems.

IT Major Concepts  
 Clinical Chemistry (Allied Medical Sciences); Methods and Techniques  
 IT Chemicals & Biochemicals  
 nucleic acid-coupled colorimetric **analyte detectors**  
 IT Methods & Equipment  
 direct **analyte detection** method: **detection**  
 method

L12 ANSWER 2 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 AN 2001:481947 BIOSIS  
 DN PREV200100481947  
 TI Polymerizable **fluorescent** liposomes incorporating lanthanide ions.  
 AU Roy, Bidhan (1); Arruda, Andrea (1); Mallik, Sanku (1); Campiglia, Andres (1)  
 CS (1) Department of Chemistry, North Dakota State University, Ladd Hall 104, Fargo, ND, 58105: bidhan\_roy@ndsu.nodak.edu USA  
 SO Abstracts of Papers American Chemical Society, (2001) Vol. 222, No. 1-2, pp. ORGN561. print.  
 Meeting Info.: 222nd National Meeting of the American Chemical Society Chicago, Illinois, USA August 26-30, 2001 American Chemical Society . ISSN: 0065-7727.

DT Conference  
 LA English  
 SL English  
 IT Major Concepts  
 Biochemistry and Molecular Biophysics  
 IT Chemicals & Biochemicals  
 conjugated alkenes; **diacetylene**; lanthanide ions:  
 incorporation; polymerizable **fluorescent** liposomes: design,  
 synthesis  
 IT Methods & Equipment  
**fluorescence** studies: analytical method  
 IT Miscellaneous Descriptors  
 Meeting Abstract  
 RN 460-12-8 (DIACETYLENE)

L12 ANSWER 3 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 AN 2001:449913 BIOSIS  
 DN PREV200100449913  
 TI A new colorimetric **assay** for studying and rapid screening of membrane penetration enhancers.  
 AU Evrard, Damien; Touitou, Elka; Kolusheva, Sofiya; Fishov, Yitzhak; Jelinek, Raz (1)  
 CS (1) Department of Chemistry and Stadler Minerva Center for Mesoscale Macromolecular Engineering, Ben Gurion University of the Negev, Beersheva, 84105: razj@bgumail.bgu.ac.il Israel  
 SO Pharmaceutical Research (New York), (July, 2001) Vol. 18, No. 7, pp. 943-949. print.  
 ISSN: 0724-8741.

DT Article  
 LA English  
 SL English  
 AB Purpose. This work aims to demonstrate a novel chemical **assay** for rapid screening and analysis of the mode of action of membrane interaction by penetration enhancers. Methods. The new bio-mimetic membrane assembly, consisting of supramolecular aggregates of lipids and conjugated **polydiacetylene**, undergoes visible and quantifiable blue-red color transitions upon interaction with penetration enhancers. Results. The new colorimetric model has been employed to examine various

classes of penetration enhancers, including 1-dodecylhexahydro-2H-azepin-2-one (Azone), oleic acid, propylene-glycol, menthol, ethoxyglycol-diethyleneglycol-monoethyl-ether (Transcutol), polysorbate-polyethylenesorbitan-monolaurate (Tween-20), and the drug 7-chloro-1-methyl-5-phenyl-3H-1,4-benzodiazepin-2-one (Diazepam). The assay enables to evaluate the validity of various observations and hypotheses proposed in previous studies regarding permeation enhancement activities. Our results suggest, for example, that propylene glycol (PG) by itself does not interfere with membranes, but rather exhibits synergistic effect in combination with other penetration enhancers. Similarly, our data demonstrate that Transcutol does not independently interact with membranes. The colorimetric system also indicates that interaction of penetration enhancers with membranes depend upon the lipid phase, as well as the self-assembly properties of the enhancer molecules. Conclusions. The new biomimetic model membrane system can be applied for rapid screening of the activities of penetration enhancers, and provides insight into the mechanisms of permeability of membrane-active compounds.

- IT Major Concepts  
 Biochemistry and Molecular Biophysics; Membranes (Cell Biology);  
 Methods and Techniques; Pharmaceuticals (Pharmacology)
- IT Chemicals & Biochemicals  
 Azone: penetration enhancer; Diazepam: penetration enhancer;  
 Transcutol: penetration enhancer; Tween-20: penetration enhancer;  
 conjugated **polydiacetylene**; lipids; menthol: penetration  
 enhancer; oleic acid: penetration enhancer; propylene-glycol:  
 penetration enhancer
- IT Miscellaneous Descriptors  
 biomimetic model: membrane system; colorimetric model
- RN 59227-89-3 (AZONE)  
 439-14-5 (DIAZEPAM)  
 111-90-0 (TRANSCUTOL)  
 9005-64-5 (TWEEN-20)  
 89-78-1Q (MENTHOL)  
 1490-04-6Q (MENTHOL)  
 112-80-1 (OLEIC ACID)  
 57-55-6 (PROPYLENE-GLYCOL)
- L12 ANSWER 4 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 AN 1999:423161 BIOSIS  
 DN PREV199900423161  
 TI Molecular recognition of concanavalin A on mannoside **diacetylene**  
 lipid monolayer at the air-water interface.  
 AU Wang, Shaopeng; Leblanc, Roger M. (1)  
 CS (1) Department of Chemistry, University of Miami, Coral Gables, FL,  
 33124-0431 USA  
 SO Biochimica et Biophysica Acta, (July 15, 1999) Vol. 1419, No. 2, pp.  
 307-312.  
 ISSN: 0006-3002.  
 DT Article  
 LA English  
 SL English  
 AB The interaction of p-10,12-pentacosadiyne-1-n-phenylamide  
 alpha-D-mannopyranoside (MPDA) with protein concanavalin A (Con A) was  
 studied at the air/water interface. The expansion of molecular area of PDA  
 (10,12-pentacosadiynoic acid)/MPDA mixed monolayer after injection of Con  
 A in subphase shows strong interaction between Con A and the monolayer.  
 The maximum expansion of molecular area decreases as the molar ratio of  
 MPDA increases due to the steric hindrance effect. By using enzyme  
 mannosidase to cut-off the mannoside headgroup of MPDA, expansion of  
 molecular area was greatly reduced, indicating that the binding of Con A



is specific to the mannoside headgroup. The kinetics of the binding fits to the first order bimolecular reaction model. **Fluorescence** quenching of **fluorescein** isothiocyanate labeled Con A after injection into the subphase gives a direct proof of the molecular recognition.

IT Major Concepts

Biochemistry and Molecular Biophysics; Methods and Techniques

IT Chemicals & Biochemicals

concanavalin A: Sigma; mannoside **diacetylene** lipid monolayer: analysis; p-10,12-pentacosadiyne-1-n-phenylamide alpha-D-mannopyranoside; 10,12-pentacosadiynoic acid: Farchan Laboratories

IT Methods & Equipment

**fluorescence** spectrum: analytical method, optical analysis

RN 11028-71-0 (CONCAVALIN A)

66990-32-7 (10 12-PENTACOSADIYNOIC ACID)

188471-21-8 (P-10 12-PENTACOSADIYNE-1-N-PHENYLAMID)

L12 ANSWER 5 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AN 1998:230094 BIOSIS

DN PREV199800230094

TI Scanning near-field **fluorescence** microscopy of thin organic films at the water/air interface.

AU Kramer, A. (1); Hartmann, T.; Eschrich, R.; Guckenberger, R.

CS (1) Max-Planck-Inst. Biochemie, D-82152 Martinsried Germany

SO Ultramicroscopy, (March, 1998) Vol. 71, No. 1-4, pp. 123-132.

ISSN: 0304-3991.

DT Article

LA English

AB We present an aperture scanning near-field optical microscope that has the ability of investigating objects at the liquid/air interface, e.g. molecularly thin films floating on a water subphase. For controlling the tip-sample distance, only the transmitted light is used. This signal shows the well-known interference fringes when approaching the tip towards a surface. Using modulation techniques, it is possible to keep the tip at an extremum of the intensity-distance curve. For high-resolution imaging the tip needs to come closer to the sample surface with respect to the regulation set value. We accomplish this by interrupting the distance regulation feedback in the forward scan, and moving the tip across the sample additionally approached by a set value. Thus, we scan the tip at constant height in the near-field of the sample. This excludes artifacts which sometimes arise in the mostly used topography following scan mode. We present transmission and **fluorescence** contrast images of a thin metal film and of **polydiacetylene** thin films, both floating on water.

IT Major Concepts

Methods and Techniques

IT Chemicals & Biochemicals

**polydiacetylene** thin film; thin metal film

IT Methods & Equipment

aperture scanning near-field optical microscope: equipment; scanning near-field **fluorescence** microscopy: detection/labeling techniques, microscopy methods

IT Miscellaneous Descriptors

**fluorescence** contrast image; transmission contrast image; water/air interface

L12 ANSWER 6 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AN 1997:361958 BIOSIS

DN PREV199799653891

TI Monolayer properties of monosialoganglioside in the mixed

- diacetylene** lipid films on the air/water interface.
- AU Cheng, Quan; Stevens, Raymond C. (1)  
 CS (1) Dep. Chem., Univ. Calif., Berkeley, CA 94720 USA  
 SO Chemistry and Physics of Lipids, (1997) Vol. 87, No. 1, pp. 41-53.  
 ISSN: 0009-3084.  
 DT Article  
 LA English  
 AB By combining the cellular membrane receptor GM1 with diacetylenic lipids, blue monolayer films can be created that undergo a colorimetric transition to red upon exposure to cholera toxin. The monolayer behaviour of GM1 in diacetylenic films was studied using the Langmuir-Blodgett technique with the goal of building colorimetric biosensors. Macroscopic characteristics of the films were obtained through analysis of surface pressure-area isotherms of GM1 and derivatized diacetylenic lipids at the air/water interface. Film optical properties and colorimetric response were optimized through modification of the ratio of receptor GM1 to **diacetylene** lipids and **detection** of the target **analyte** cholera toxin. Isothermic compression studies show that the mixed monolayers exhibit favorable film compressibility and high transferability as compared to the monolayers consisting of pure GM1. The impact of ionic strength and sub-phase pH on molecular interactions of lipids and miscibility of the mixed films is discussed. Contrary to usual temperature dependence observed for saturated fatty lipids, GM1/diacetylenic monolayers display an inverse relationship between temperature and surface pressure.
- IT Major Concepts  
 Biochemistry and Molecular Biophysics; Membranes (Cell Biology)
- IT Chemicals & Biochemicals  
**DIACETYLENE**; **GANGLIOSIDE GM1**
- IT Miscellaneous Descriptors  
 BIOCHEMISTRY AND BIOPHYSICS; BIOSENSORS; COLORIMETRIC RESPONSE;  
**DIACETYLENE** LIPID FILMS; **GANGLIOSIDE GM1**; **LANGMUIR-BLODGETT**  
 TECHNIQUE; **MEMBRANES**; **MONOLAYERS**; **MONOSIALOGANGLIOSIDE**; **OPTICAL**  
**PROPERTIES**
- RN **460-12-8 (DIACETYLENE)**  
 37758-47-7Q (**GANGLIOSIDE GM1**)  
 104443-62-1Q (**GANGLIOSIDE GM1**)
- L12 ANSWER 7 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 AN 1995:403491 BIOSIS  
 DN PREV199598417791  
 TI Total alignment of calcite at acidic **polydiacetylene** films:  
 Cooperativity at the organic-inorganic interface.
- AU Berman, Amir; Ahn, Dong June; Lio, Anna; Salmeron, Miquel; Reichert, Anke;  
 Charych, Deborah (1)  
 CS (1) Center Advanced Materials, Lawrence Berkeley Lab., Berkeley, CA 94720  
 USA  
 SO Science (Washington D C), (1995) Vol. 269, No. 5223, pp. 515-518.  
 ISSN: 0036-8075.  
 DT Article  
 LA English  
 AB Biological matrices can direct the absolute alignment of inorganic crystals such as calcite. Cooperative effects at an organic-inorganic interface resulted in similar co-alignment of calcite at polymeric Langmuir-Schaefer films of 10,12-pentacosadiynoic acid (p-PDA). The films nucleated calcite at the (012) face, and the crystals were co-aligned with respect to the polymer's conjugated backbone. At the same time, the p-PDA alkyl side chains reorganized to optimize the stereochemical fit to the calcite structure, as visualized by changes in the optical spectrum of the polymer. These results indicate the kinds of interactions that may occur

in biological systems where large **arrays** of crystals are co-aligned.

- IT Major Concepts
  - Biochemistry and Molecular Biophysics
- IT Chemicals & Biochemicals
  - CALCITE; **POLYDIACETYLENE**
- IT Miscellaneous Descriptors
  - CALCITE; CRYSTAL GROWTH
- RN 13397-26-7 (CALCITE)
  - 27987-87-7 (POLYDIACETYLENE)**
  
- L12 ANSWER 8 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
- AN 1994:502192 BIOSIS
- DN PREV199497515192
- TI A highly sensitive enzyme-linked immunosorbent **assay** (ELISA) for antitumor polyacetylenic alcohol panaxytriol.
- AU Saita, Tetsuya; Matsunaga, Hisashi; Yamamoto, Hiroshi; Nagumo, Fumio; Fujito, Hiroshi; Mori, Masato; Katano, Mitsuo (1)
- CS (1) Saga Med. Sch., Nabeshima 5-chome 1-1, Saga 849 Japan
- SO Biological & Pharmaceutical Bulletin, (1994) Vol. 17, No. 6, pp. 798-802. ISSN: 0918-6158.
- DT Article
- LA English
- AB A new type of antitumor polyacetylenic alcohol, panaxytriol, was isolated from the roots of Panax ginseng C. A. MEYER. A highly sensitive enzyme-linked immunosorbent **assay** (ELISA) for the determination of panaxytriol was developed, which is capable of measuring as low as 25.6 pg/ml. Anti-panaxytriol antibody was obtained by immunizing rabbits with panaxytriol conjugated with bovine serum albumin using the N-succinimidyl ester method. An enzyme marker was similarly prepared by coupling panaxytriol with horseradish peroxidase. The specificity of this ELISA seems to be primarily toward both the glycol moiety and the **diacetylene** moiety of the panaxytriol, showing a slight crossreaction with the other panaxytriol analogues which are structurally different only in C-9,10 positions, but no cross-reaction with the 1,2-decanediol or 3-nonyl-1-ol. The values for panaxytriol concentration detected by this **assay** were comparable with those detected by the gas chromatography method. The ELISA was about 5000 times more sensitive in detecting panaxytriol. Using this **assay**, panaxytriol levels were easily determined in the blood of rats. The ELISA may be a valuable tool for studies of the biological and pharmacological properties of the polyacetylenic alcohol, panaxytriol.
- IT Major Concepts
  - Biochemistry and Molecular Biophysics; Enzymology (Biochemistry and Molecular Biophysics); Immune System (Chemical Coordination and Homeostasis); Metabolism; Methods and Techniques; Pharmacognosy (Pharmacology); Pharmacology; Tumor Biology
- IT Chemicals & Biochemicals
  - ALCOHOL; PANAXYTRIOL
- IT Miscellaneous Descriptors
  - ANALYTICAL METHOD; ANTINEOPLASTIC; PANAXYTRIOL; PHARMACOKINETICS
- ORGN Super Taxa
  - Araliaceae: Dicotyledones, Angiospermae, Spermatophyta, Plantae; Leporidae: Lagomorpha, Mammalia, Vertebrata, Chordata, Animalia; Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
- ORGN Organism Name
  - rabbit (Leporidae); rat (Muridae); Panax ginseng (Araliaceae)
- ORGN Organism Superterms
  - angiosperms; animals; chordates; dicots; lagomorphs; mammals; nonhuman mammals; nonhuman vertebrates; plants; rodents; spermatophytes;

vascular plants; vertebrates  
 RN 64-17-5 (ALCOHOL)  
 87005-03-6 (PANAXYTRIOL)

L12 ANSWER 9 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 AN 1993:436971 BIOSIS  
 DN PREV199396091596  
 TI Direct colorimetric detection of a receptor-ligand interaction by a polymerized bilayer assembly.  
 AU Charych, Deborah H. (1); Nagy, Jon O.; Spevak, Wayne; Bednarski, Mark D.  
 CS (1) Cent. Advanced Materials, Lawrence Berkeley Lab., Berkeley, CA 94720 USA  
 SO Science (Washington D C), (1993) Vol. 261, No. 5121, pp. 585-588.  
 ISSN: 0036-8075.  
 DT Article  
 LA English  
 AB Detection of receptor-ligand interactions is generally accomplished by indirect **assays** such as enzyme-linked immunosorbent **assay**. A direct colorimetric detection method based on a **polydiacetylene** bilayer assembled on glass microscope slides has been developed. The bilayer is composed of a self-assembled monolayer of octadecylsilane and a Langmuir-Blodgett monolayer of **polydiacetylene**. The **polydiacetylene** layer is functionalized with an analog of sialic acid, the receptor-specific ligand for the influenza virus hemagglutinin. The sialic acid ligand serves as a molecular recognition element and the conjugated polymer backbone signals binding at the surface by a chromatic transition. The color transition is readily visible to the naked eye as a blue to red color change and can be quantified by visible absorption spectroscopy. Direct colorimetric detection by **polydiacetylene** films offers new possibilities for diagnostic applications and screening for new drug candidates or binding ligands.

IT Major Concepts  
 Membranes (Cell Biology); Methods and Techniques; Pharmacology  
 IT Miscellaneous Descriptors  
 SYNTHETIC METHOD; THERAPEUTIC AGENT

L12 ANSWER 10 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 AN 1992:346420 BIOSIS  
 DN BA94:38645  
 TI SPONTANEOUS DOMAIN FORMATION OF PHOSPHOLIPASE A-2 AT INTERFACES  
**FLUORESCENCE** MICROSCOPY OF THE INTERACTION OF PHOSPHOLIPASE A-2 WITH MIXED MONOLAYERS OF LECITHIN LYSOLECITHIN AND FATTY ACID.  
 AU REICHERT A; RINGSDORF H; WAGENKNECHT A  
 CS INST. ORGANISCHE CHEMIE, J.-J. BECHER WEG 18-20, UNIVERSITAET MAINZ, W-6500 MAINZ, GERMANY.  
 SO BIOCHIM BIOPHYS ACTA, (1992) 1106 (1), 178-188.  
 CODEN: BBACAQ. ISSN: 0006-3002.  
 FS BA; OLD  
 LA English  
 AB **Fluorescence** microscopy has recently been proven to be an ideal tool to investigate the specific interaction of phospholipase A2 with oriented substrate monolayers. Using a dual labeling technique, it could be shown that phospholipase A2 can specifically attack and hydrolyze solid analogous L-.alpha.-DPPC domains. After a critical extent of monolayer hydrolysis the enzyme itself starts to aggregate forming regular shaped protein domains (Grainger et al. (1990) Biochim. Biophys. Acta 1023, 365-379). In order to confirm that the existence of hydrolysis products in the monolayer is necessary for the observed aggregation of phospholipase A2, mixed monolayers of D- and L-.alpha.-DPPC, L-.alpha.-lysoPPC and

palmitic acid in different ratios were examined. The phase behavior and the interaction of these films with phospholipase A2 were directly visualized with an epifluorescence microscope. Above a certain critical concentration of lysolecithin and palmitic acid in the monolayer, compression of these mixed films leads to phase separation and formation of mixed domains of unknown composition. Their high negative charge density is evidenced by preferential binding of a cationic dye to these phase-separated areas. Introduction of **fluorescence**-labeled phospholipase A2 underneath these mixed domains results in rapid binding of the protein to the domains without visible hydrolytic activity, regardless of whether the L-form or the D-form of the DPPC were used. In binary mixtures, only those with DPPC/palmitic acid show formation of phase-separated areas which can be specifically targeted by phospholipase A2 leading to a rapid formation (within 2 min) of protein domains. Experiments with pyrenedecanoic acid containing monolayers give the first direct evidence that acid is located above the enzyme domains. These results show that a locally high negative charge density of the phase-separated domains is one of the prerequisites for the binding of phospholipase A2. In addition, however, small amounts of D- or L- $\alpha$ -DPPC headgroups within the domains of the monolayer seem to be necessary for recognition followed by fast binding of the protein to the domains. This is confirmed by experiments with mixed monolayers of **diacetylene** carboxylic acid and D- $\alpha$ -DPPC. The acid-immiscible with lecithin-forms well defined pure acid domains in the monolayer. While the cationic dye can be docked rapidly to these phase separated areas, no preferential enzyme binding and thus no protein domain formation below these acid domains can be induced.

IT Miscellaneous Descriptors

L-ALPHA DIPALMITOYLPHOSPHATIDYLCHOLINE PALMITIC ACID L-ALPHA  
LYSOPALMITOYLPHOSPHATIDYLCHOLINE

RN 57-10-3 (PALMITIC ACID)

63-89-8 (L-ALPHA DIPALMITOYLPHOSPHATIDYLCHOLINE)

9001-84-7 (PHOSPHOLIPASE A-2)

17364-16-8 (L-ALPHA LYSOPALMITOYLPHOSPHATIDYLCHOLINE)

L12 ANSWER 11 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AN 1990:243362 BIOSIS

DN BA89:130315

TI EFFECTS OF CHAIN-LENGTH AND UNSATURATION ON AFFINITY AND SELECTIVITY AT  
MUSCARINIC RECEPTORS.

AU BARLOW R B; HOLDUP D W; HARRIS G; VEALE M A; WILLIAMS A

CS DEP. PHARMACOL., MED. SCH., UNIVERSITY WALK, BRISTOL BS8 1TD.

SO BR J PHARMACOL, (1990) 99 (3), 622-626.

CODEN: BJPCBM. ISSN: 0007-1188.

FS BA; OLD

LA English

AB 1. Lengthening the chain in diphenylacetylcholine decreases affinity for  
muscarinic cholinergic receptors in guinea-pig ileum.

Diphenylacetoxypropyldimethylamine and its quaternary trimethylammonium salt are roughly equiactive: the dimethylamine and the piperidine have some selectivity for ileum compared with atria, but are not as active nor as selective as 4-diphenylacetoxypiperidine (4-DAMP) methobromide (MeBr). With the weaker diphenylacetoxypiperidine compounds the base is more active than the quaternary salt. 2. The diphenylacetoxypiperidine-, cis-butenyl and trans-butenyl compounds have similar affinities. The quaternary salts are less active than the tertiary bases, but they are less selective than the butenyl analogues studied in earlier work. 3 1,1-Diphenyl-1-hydroxy-2,4-hexadiynyl dimethylamine and its trimethylammonium salt are inactive in concentrations below 100  $\mu$ M, as are the (+)-camphor-sulphonyl ester of 4-hydroxy-N-methyl piperidine and its methiodide. The

(.+-.)-phenylcyclopentylacetyl ester of 4-hydroxy-N-methylpiperidine methobromide is more active than its cyclohexyl analogue and than 4-DAMP MeBr but it is less selective than 4-DAMP MeBr. 4. The high selectivity of p-fluoro-hexahydrosila-diphenidol is confirmed but this compound has relatively low affinity (for ileum log K=7.8). 5. The results indicate steric constraints to binding at muscarinic receptors which could be used to check molecular modeling of the receptor based on its known amino acid sequence. The group binding the charged nitrogen is probably at the mouth of a cavity which can accomodate two large rings (as in 4-DAMP MeBr) but with a depth less than about 7 .ANG. so that the rod-like hexadiynes cannot fit. Differences between types of receptor may only involve small changes in geometry secondary to differences in amino acids not directly involved in binding and the production of selectivity depends upon finding substituents which interfere with binding more at one type of receptor than at another.

IT Miscellaneous Descriptors

GUINEA-PIG ILEUM ATRIA DIPHENYLACETOXYPROPYL COMPOUNDS  
DIPHENYLACETOXYBUTYL COMPOUNDS CIS BUTENYL COMPOUNDS TRANS BUTENYL  
COMPOUNDS DIACETYLENES MOLECULAR MODELING

RN 460-12-8D (DIACETYLENES)  
11069-22-0D (BUTENYL)

L12 ANSWER 12 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AN 1989:518062 BIOSIS

DN BA88:134205

TI POLYFLUORO-SUBSTITUTED ALKYNES AND ALKADIYNIC CARBOXYLIC AND HYDROXAMIC ACIDS.

AU RADCHENKO O A; PROSHAKOVA E V; IL'CHENKO A YA

CS INST. ORG. CHEM., ACAD. SCI. UKR. SSR, KIEV, USSR.

SO DOKL AKAD NAUK UKR SSR SER B GEOL KHIM BIOL NAUKI, (1989) 0 (4), 44-47.  
CODEN: DNNADO. ISSN: 0201-8454.

FS BA; OLD

LA Russian

AB 1,3,3,4,10-pentahydrododecafluoro-1-decyn-4-ol, product of its dimerization, 15-(16-hydroperfluorohexyl)-15-hydroxy-10,12-pentadecadienoic and hydroxamic acids and other **fluorosubstituted diacetylene** derivatives have been synthesized. Their spectra and ability to topochemical polymerization are described.

IT Miscellaneous Descriptors

HUMAN APPLICATION PHARMACOLOGY TOPOCHEMICAL POLYMERIZATION SPECTRA

L12 ANSWER 13 OF 13 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AN 1988:402102 BIOSIS

DN BA86:74741

TI OPTICAL DETECTION OF TOXIC GASES USING **FLUORESCENT** PORPHYRIN LANGMUIR-BLODGETT FILMS.

AU BESWICK R B; PITT C W

CS DEP. ELECTRONIC ELECTRICAL ENG., UNIV. COLL. LONDON, TORRINGTON PLACE, LONDON WC1E 7JE, ENGL.

SO J COLLOID INTERFACE SCI, (1988) 124 (1), 146-155.

CODEN: JCISA5. ISSN: 0021-9797.

FS BA; OLD

LA English

AB The **fluorescence** response of Langmuir-Blodgett films of tetraphenylporphine mixed with arachidic acid (AA) and pentacos-10,12-diynoic acid (12,8-**diacetylene**) has been studied in the presence of the industrial pollutant gases NO<sub>2</sub>, HCl, and Cl<sub>2</sub>. The **fluorescence** of tetraphenylporphine (TPP) is quenched in the presence of very low concentrations of these gases (1-10 ppm). The **fluorescence** response of the **diacetylene**/TPP films to

low concentrations of NO<sub>2</sub> (< 100 ppm) is reversible, and by exposing the nonreversibly quenched TPP/**diacetylene** and TPP/AA films to NH<sub>3</sub> the **fluorescence** is completely restored. The **fluorescence** quenching action of these gases has been attributed to the "heavy atom effect" which facilitates intersystem crossing within excited TPP molecules. An optical fiber/prism method of assessing the film response was used.

IT Miscellaneous Descriptors

NITROGEN DIOXIDE CHLORINE HYDROCHLORIC ACID INDUSTRIAL POLLUTANTS

RN 101-60-0 (PORPHYRIN)

7647-01-0 (HYDROCHLORIC ACID)

7782-50-5 (CHLORINE)

10102-44-0 (NITROGEN DIOXIDE)